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ABSTRACT

The four 1997 issues include these articles: "Introduction to Government and Binding Theory," parts 4-7 (Cheryl A. Black), which discuss constraints on movement, semantic roles and case theory, binding theory, and more recent additions to the theory; "A Scholar's Ethic" (William J. Samarin), concerning the behavior of scholars in the international community; and "LinguaLinks Linguistic Workshop Field-Test" (Carla F. Radloff), a report of the field testing of linguistic structural analysis software. Dissertation abstracts, reviews of books and articles and professional announcements are also included in each issue. (MSE)

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From the Linguistics Department

CARLA Conference
(Computer Assisted Related Language Adaptation)
Waxhaw, North Carolina
14-15 November 1996

Twenty-one papers were presented at the General CARLA Conference at the JAARS Center in Waxhaw. This conference was held under the sponsorship of SIL's International Linguistics Department, Academic Computing Department, and ICS-JAARS.

The proceedings of the conference were printed and distributed to participants, with a copy otherwise sent to each SIL field entity represented at the Computer Technical Conference held the week following the CARLA Conference. A list of the papers presented is given on pp. 4-5. Of special interest to readers of *Notes on Linguistics* are the papers in the sections on 'CARLA and Linguistics' and 'CARLA and Discourse Analysis'.

One item I would particularly like to draw to our readers' attention is a presentation by Phil Quick (Indonesia Branch and currently in a doctoral program at Australian National University). Phil is currently developing software which can be used with Shoebox files to aid in different aspects of discourse analysis. One sort of output is a chart showing a 'span analysis', useful for tracking different instantiations of participants (pronouns, NP-s, anaphora) and markings of clause word orders (SVO, SOV, etc.), or marking of inverse, obviate, passive, antipassive, split intransitivity, or similar patterns.

Another output of this software is automated tabulation of topic continuity systems, such as that proposed by T. Givón. Using tagged Shoebox text files of natural language text, the software will quantify topic persistence and referential distance according to the methodology proposed by Givón. As Quick stated in his paper:

> With the capability of computer assisted quantification comes the feasibility of analyzing a large corpus of texts. This makes it possible to quickly analyze a large number of texts and to get a statistical quantification of material that should provide a means to a high quality analysis. This level of analysis is currently lacking in most of the SIL translation sites.

As one who has spent days and even weeks manually counting and calculating precisely these sorts of quantification of topic continuity, I am very encouraged to have this capability become automated. I would encourage field teams to take advantage of it as it becomes available. Many linguists have heretofore been dubious about what goes on under the name of 'discourse analysis' as being subjective, lacking rigor, and not being verifiable. Quantification in areas such as topic continuity is a big step in the direction of a more rigorous and objective discourse analysis.

—David Payne, Editor

Papers read at the 1996 General CARLA Conference

CARLA, People, and Language Programs

Scott Crickmore 'Strategies for implementing a CARLA project that consists of teams that are international and inter-mission'

David Matti 'The use of CARLA in South Sulawesi'

CARLA and Computational Tools

Randy Regnier 'Isthmus Zapotec to Quiegolani Zapotec: A New Testament computer adaptation project, and an AMPLE source disambiguation tool needed to do the adaptation'

Stephen McConnel 'KTEXT and PC-PATR: Unification based tools for computer aided adaptations'

CARLA and Linguistics

Cheryl Black 'A PC-PATR implementation of GB syntax'

John Duerksen 'Two methods of modeling morphological fusion'

David Weber 'Tightening the linguistic belt: Some comments on using AMPLE for linguistic discovery and spelling control'

Joe Benson, H. Andrew Black and Barbara Glaser 'Modeling Chichicapan Zapotec morphology'

Mike Maxwell 'Two theories of morphology, one implementation'

H. Andrew Black 'TonePars: A computational tool for exploring autosegmental tonology'

Albert Bickford 'Grammatical concepts taught in current SIL prefield training'

CARLA and Discourse Analysis

Russell Cooper 'Can a top-down CARLA emulate HARLA? Some discourse level considerations for our next generation of parsers'

Phil Quick 'Multilinear discourse analysis software demonstration'

CARLA and Translation

Katharine Barnwell 'What CARLA consultants need to know about the translation process'

John Tuggy 'Checking CARLA produced translations'

CARLA - The Next Generation

Alan Buseman and Karen Buseman 'Shoebox 3 and CARLA'

H. Andrew Black, Gary Simons and Bill Mann 'Overview of a design for the next generations of CARLA tools'

Bill Mann 'Programmed expertise and support for CARLA activity'

H. Andrew Black 'Son of AMPLE, PhonRule and Stamp: Towards a re-implementation/reconception'

Gary Simons 'PTEXT: A format for the interchange of parsed texts among natural language processing applications'

William Bergman 'An implementation of transfer based on tree editing'

■

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Dr. Rod Casali (Ghana Group), University of California Los Angeles 1996
Dr. Clive McClelland (Asia Area), University of Texas at Arlington 1996

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Introduction to Government and Binding theory: Constraints on movement

Cheryl A. Black
SIL—Mexico Branch and University of North Dakota

In the first three articles in this series (May, August and November 1996), we have seen how to account for the basic word order of a language in terms of the X-Bar theory of phrase structure. Now we need to determine how constructions which do not have the basic word order are derived.

Government and Binding theory (Chomsky 1981, 1982, 1986) considers word order an important part of the syntax and therefore seeks to account for how and why different word orders come about within a particular language.[1] Since it is a derivational theory, the various word order changes will be assumed to arise from movement of one or more constituents, as was done in the predecessor to GB, Transformational Grammar. However, Transformational Grammar was strongly criticized as being too powerful, therefore GB puts constraints both on the movement allowed and on the structure resulting from the movement. We will see what these constraints are as we develop the analysis of Yes/No questions and content questions, one step at a time.

1. Yes/No Questions. To form a Yes/No question in English, an auxiliary is moved in front of the subject, as in the change from (1a) to (1b). The distribution in (1c-g) shows that we need to be careful in how we formulate this movement rule to be sure that only the grammatical Yes/No questions are generated. For example, only one auxiliary can move (an auxiliary only, not a main verb), it has to be the first auxiliary, and that first auxiliary agrees with the subject and determines the form of the following verb.

(1) a. Sally has declined the job.
b. Has Sally declined the job?
c. * Has Sally declines the job?
d. * Has Sally might decline the job?
e. * Might have Sally declined the job?
f. Might Sally have declined the job?
g. * Declined Sally the job?

---

[1] Even in languages which allow (fairly) free word order, usually due to a rich case and/or agreement system, there is an unmarked, neutral, or more frequently occurring word order. The other allowed word orders are more marked in that they involve foregrounding or backgrounding of one or more constituents and/or would only be used in specific contexts. The unmarked word order would be the D-structure in GB, with the other orders being derived by movement.

Sentences like:

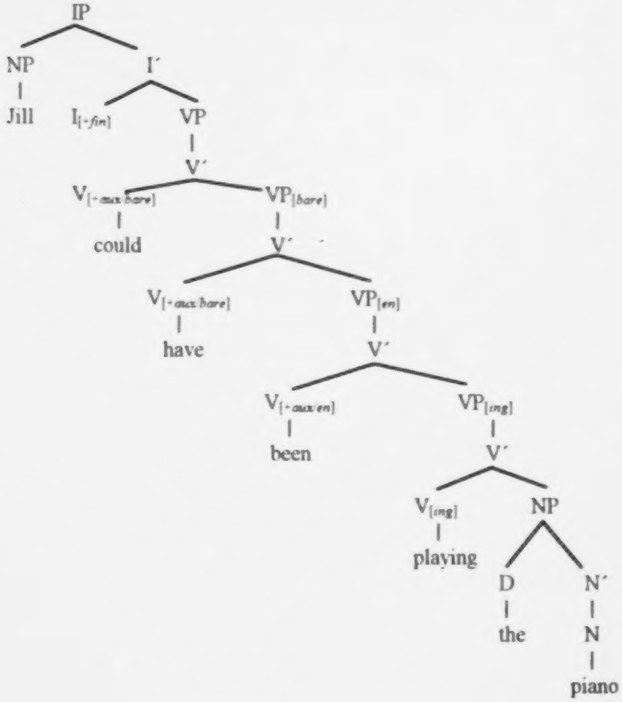
(2) Jill could have been playing the piano.

show that auxiliaries come in a certain order and that they subcategorize for the form of the verb that comes after them. This means that auxiliaries must be heads themselves, each subcategorizing for a VP of a certain type. For example, *could, might, shall,* etc. are modals which may not be followed by another modal and require the verb that comes after them to be in the bare form. The lexical entry for *could* is given in (3). Similar entries could be given for the other modals and for the non-modal auxiliaries.

(3) could $V_{[+aux/+modal]}$ [_$VP_{[-modal/bare]}$]

The structure for (2) has four VPs, stacked one upon the other, as in (4).

(4)


IP
NP
I′
Jill
I[+fin]
VP
V′
V[+aux/bare]
VP[bare]
could
V′
V[+aux/bare]
VP[en]
have
V′
V[+aux/en]
VP[ing]
been
V′
V[ing]
NP
playing
D
N′
the
N
piano

In Yes/No questions, the order and form restrictions still hold. With a movement analysis, we can account for these restrictions via subcategorization at D-structure. Then the highest auxiliary can move in front of the subject to obtain the surface word order.

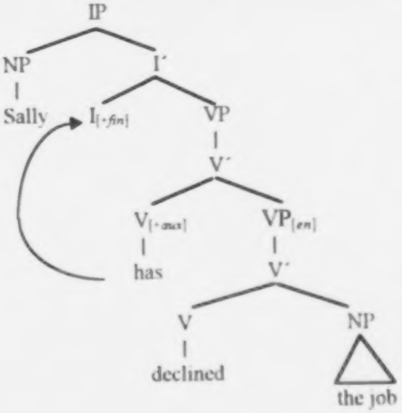
Two other phenomena show that the highest auxiliary is important also: VP deletion and the placement of negation.

(5) Jill couldn't have been playing the piano but Bill could (have [been]).

We see in the first clause of (5) that negation follows the first auxiliary. The options for the second clause show that VP deletion constructions carry the restriction that at least one auxiliary (the highest one) must remain behind. A coherent account of these facts yields that the highest auxiliary must move to I^0.

The D-structure tree for (1a or b) would be as shown in (6), with the movement of the highest auxiliary *has* up to $I_{[+fin]}$ indicated by the arrow:

(6)



This movement of $V_{[+aux]}$ to I^0 is called HEAD MOVEMENT, since a head is moving to another head position. This movement does not give us the word order of a Yes/No question, so something more is needed. We know that the auxiliary moves in front of the subject, but we do not know where it attaches. Before we can propose what that movement is, we need to see how movement is constrained in the theory.

Two basic principles are used to constrain movement. First is the Principle of No Loss of Information, which simply says that nothing can move to a position that is already phonetically filled. The second principle says that movement must be either STRUCTURE-PRESERVING or ADJUNCTION. Structure-preserving movement means that the moved constituent must fit into the tree structure that is already there. Further, it must fit the requirements of X-Bar theory so that it could have been generated there at D-structure. This means that you cannot put a head into a complement position or a phrase into a head position, and you cannot add a complement that was not subcategorized for (and therefore filled) at D-structure. In general, a head can move to an empty head position, as we saw when the highest auxiliary moved to I^0, or a maximal projection can move to an empty specifier position.

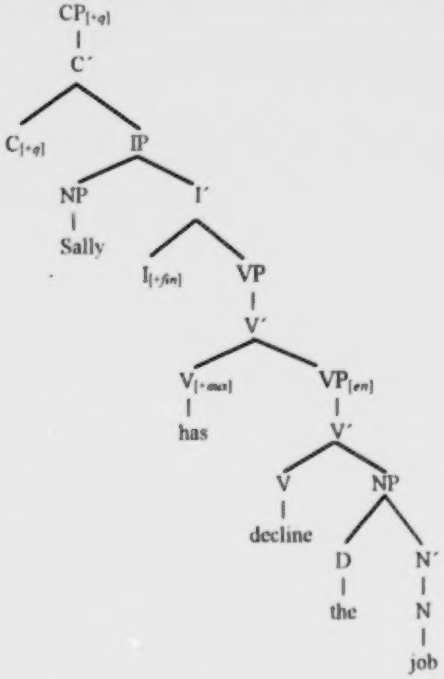
Looking back at the tree in (6), we see that there is not another empty head position for the auxiliary to move to. We do have the option of adjoining to the IP, since movement by adjunction is allowed, but the adjunction rule is recursive, which would incorrectly predict that more than one auxiliary may be fronted ((1e) is ungrammatical).

We can find a better solution by looking at embedded Yes/No questions, as in (7):

(7) I wonder whether Sally has declined the job.

We know from Article 2 that the embedded clause following *wonder* is a CP. Semantically, both main clause Yes/No questions and embedded Yes/No questions have the same interpretation; one only requires a more direct answer than the other. Drawing on this parallel between main clauses and embedded clauses, we can posit that main clauses are also CPs, and that the CP and its head C for both main clause and embedded clause questions have the feature [+q]. Then the D-structure for (1b) becomes:

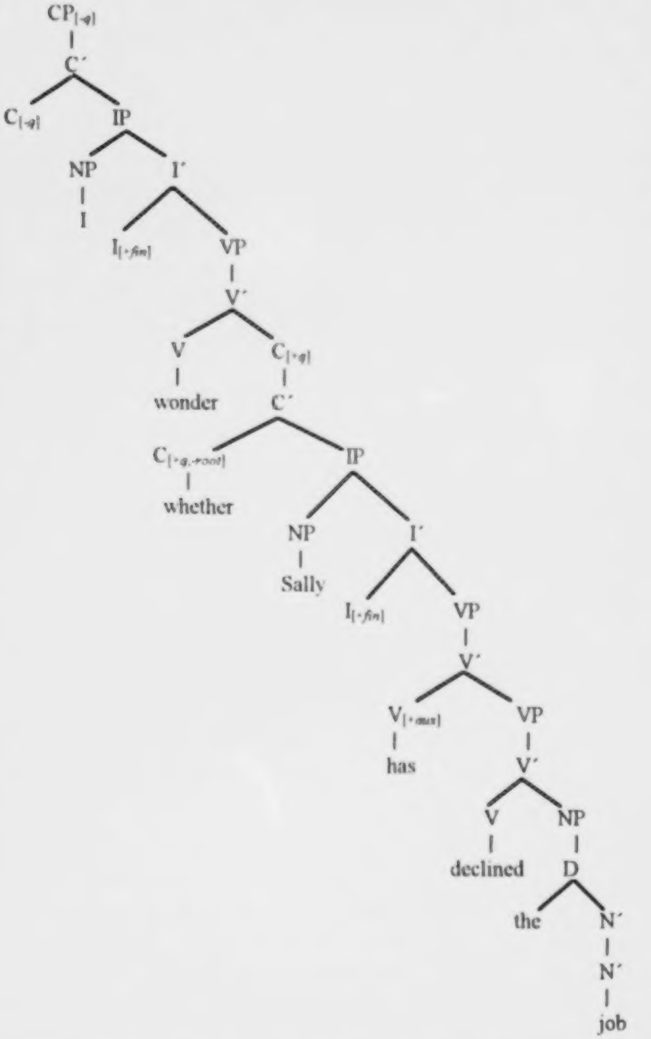
(8)



Now after the $V_{[+aux]}$ moves to I^0 it can move on to $C_{[+q]}$ to obtain the word order of Yes/No questions. While we want to assume that the highest $V_{[+aux]}$ moves to I^0 in all cases, the movement of I^0 to $C_{[+q]}$ only occurs in questions, since declaratives and other non-questions will have a $C_{[-q]}$.

Main clause and embedded Yes/No questions now have parallel structure, yet there is a significant difference in their surface word order. How do we account for the fact that no Subject/Aux inversion occurs in embedded Yes/No questions? The tree in (9) shows that the $C_{[+q]}$ position is filled in an embedded clause with *whether*. The Principle of No Loss of Information blocks the movement of *has* to the $C_{[+q]}$ position, without any additional stipulations.

(9)


CP[-q]
C′
C[-q]
IP
NP
I
I′
I[+fin]
VP
V′
V
wonder
C[+q]
C′
C[+q,-root]
whether
IP
NP
Sally
I′
I[+fin]
VP
V′
V[+aux]
has
VP
V′
V
declined
NP
D
the
N′
N′
job

The examples in (10)-(12) from Black English (Jim McCloskey, p.c.) show that Subject/Aux inversion is not a root-clause-only phenomenon universally.

(10) Ask your father DOES HE want his dinner?
(11) Do you remember DID THEY live in Rosemont?
(12) I never found out WOULD HE really have come with me.

The only change we need to make to account for this data is to note that Black English has a Ø C $_{[+q,-root]}$ instead of *whether*. Therefore, I^0 moves to C $_{[+q]}$ in embedded clauses just as in root clauses in Black English, since no information is lost.

2. Content Questions. Content questions have the same Subject/Aux inversion as Yes/No questions, so the same head movement of the highest auxiliary to I^0 and on to C$_{[+q]}$ applies. This movement takes place automatically because both types of questions have a C$_{[+q]}$. The difference between Yes/No questions and content questions is that an additional movement takes place in content questions: a [+wh] phrase moves to the front. For example:

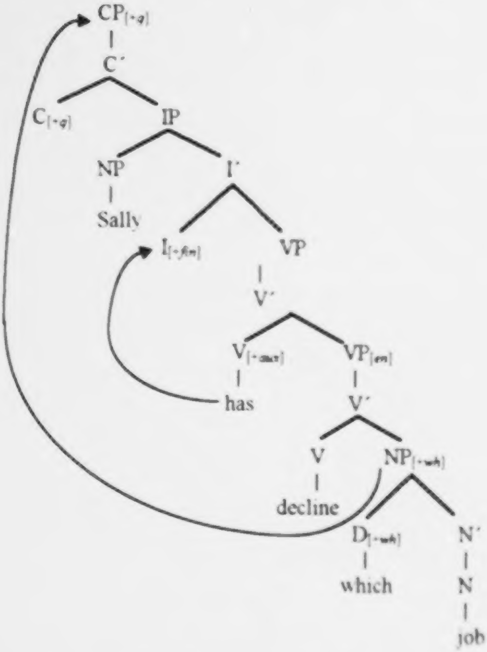
(13) Which job has Sally declined?

Since there is an open specifier position in the CP$_{[+q]}$, the *wh*-phrase *which job* can move to that position, as shown in the tree in (14). This movement is called $\bar{A}$-movement (where the bar in this case is set complement notation), which is movement to a non-argument position.[2]

---

[2] An argument is a subject or complement position. Therefore, a non-argument position is a non-subject specifier position or an adjoined position.

(14)



The movements required for questions can be stated simply:

(15) a. The highest $V_{[+aux]}$ must move to I^0.
b. I^0 must move to $C_{[+q]}$.
c. An $XP_{[+wh]}$ must move to the specifier of a $C_{[+q]}$.

No conditions are needed on the rules, because the general principles rule out the ungrammatical examples.[3] For example, English allows multiple *wh*-phrases in a single question, such as in (16), yet only one of these phrases is fronted. Since there is only a single specifier position for $CP_{[+q]}$, once one *wh*-phrase is fronted, the Principle of No Loss of Information blocks further movement.

(16) a. Who(m) did John give what to?
b. * Who(m) what did John give to?

---

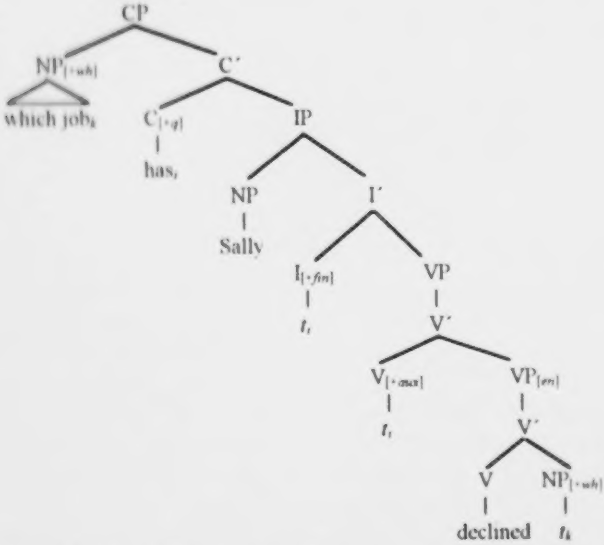
[3] Other principles are needed to handle all the cases.

c. What did John give to whom?
d. * What to whom did John give?

Of course, not all languages have movement of *wh*-phrases in questions while others allow multiple fronting, so parameterization is needed to account for the variation seen (Black 1994:Appendix). The motivation for Ā-movement seems to be the scope of the semantic operator. Other instances of Ā-movement involve focus, negation, and quantifier constructions, all of which are semantic operators. Some languages, such as Zapotec and Tzotzil require scope to be readable from the S-structure tree, whereas other languages allow further covert movement to take place to establish scope for semantic interpretation.

3. Traces of Movement. Instead of drawing arrows on the D-structure tree to indicate movement, as we have done so far, a separate S-structure tree is drawn with a coindexed trace (indicated by the subscripted *t*) left in place to show where the moved constituent came from. The S-structure tree for (13) corresponding to tree (14) is given in (17).

(17) S-Structure



The traces also serve to insure that movement cannot move an item into a previously filled position.

We have seen examples of both head movement and Ā-movement here. The other type of movement is A-movement: movement to an argument position. This type turns out to be all movement to subject position, such as passive, unaccusative, and raising constructions. Nothing is allowed to move to a complement position, since complement positions are determined by subcategorization and filled at D-structure. The full analysis of these A-movement constructions requires more theoretical 'machinery' involving semantic roles and Case theory. These will be presented in the next article.

REFERENCES

Black, Cheryl A. 1994. Quiegolani Zapotec syntax. Ph.D. dissertation. University of California, Santa Cruz.

Chomsky, Noam. 1981. Lectures on Government and Binding. Dordrecht: Foris.

______. 1982. Some concepts and consequences of the theory of Government and Binding. Chicago: MIT Press.

______. 1986. Barriers. Chicago: MIT Press.

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Remarks

A scholar's ethic[1]

William J. Samarin[2]

No one among all of my teachers nor anything I ever read in linguistics taught me anything about the ethics of scholarship. Like everyone else in the linguistic community I brought into my professionalism something that I had inherited in character, something that I had learned at home and in the early years of school, and a lot that I inferred from observing the subculture of scholarship. What principles, then, have guided me, and what can I pass on?

I address myself to our behavior in the international community, realized partly in human interaction at conferences, symposia, workshops, and the like, but mostly through writing. Set aside for many reasons are matters that concern one's behavior as an employed person—a teacher and member of some institution. Of the fundamental virtues, like probity, nothing need be said—as light is to seeing, they are requisite for understanding. In decalogic fashion I suggest only four commandments.

---

[1] This is an abbreviated and slightly revised version of a section from an 18,000-word memoir entitled *'C'est passionnant d'être'* (but written in English) to appear in *First Person Singular III* (Studies in the History of the Language Sciences 62), edited by Konrad Koerner (Amsterdam and Philadelphia: John Benjamins Publishing Company) copyrighted and used with permission.

[2] W. J. (known to his friends as Bill) Samarin was introduced to linguistics in 1946 when he was a student at Biola. In the spring term of 1947 he took a course in phonetics taught by Kenneth Pike. In the summer of that year Bill and his fiancée Ruth were students at SIL's summer school at the University of Oklahoma—known at that time as Camp Wycliffe. After receiving a four-year B.Th. at Biola (1948) he studied linguistics at the University of California at Berkeley receiving his B.A. in 1950. From that same university he received his Ph.D. in linguistics (1952). He spent most of his academic career at the University of Toronto, from which he retired in 1991. Since then he has been engaged in the study of changes that have taken place in Sango, the pidgin that missionaries use in the Central African Republic, and which he learned in 1952.

I. Be responsible. Scholars must convince others that they can be trusted when they make their arguments. By the very nature of scientific rhetoric this requirement is usually met. In a simple case, one describes one's data and what is revealed statistically. Since, however, reliability is gradient and sometimes even fuzzy, qualifications and hedges are sometimes required. There is, unfortunately, a vast area of grayness and obscurity in which we get lost or are misled. Shame on us when we exploit **generally** and **frequently** and **usually** when research cannot support our assertions! Would what we write stand up to examination when students are taught to challenge its veracity? 'Proof' can be a heavy burden to carry around; one's argument is always easier when it is simply put. Thus, it is simpler to declare that 'Pidgins are characterized by…' than to say that 'From X, Y, and Z, we observe that pidgins are…'

II. Be vulnerable. Everyone in scholarship has entered the ring. There is no escaping the pommeling we will experience, given to us in good will or ill. A colleague from another discipline described this kind of existence as masochism, and his manner revealed that it was not a masochism he enjoyed. (Is my case an odd one? I have frequently suffered painful symptoms of stress while simply disagreeing with the author whom I was reading!) One gets inured, we can tell our younger colleagues, to some of the criticism, justified or not, but it always helps to stay in training. Friends can help in preparing you for what may come 'out there'. For this reason I am grateful to all those who have read my manuscripts. I have also made it a practice, but not in every instance I must confess, of asking colleagues while still working on a paper if I have understood them—if my criticism is just.

III. Be charitable. We all make mistakes. We never know enough. We much too frequently express ourselves less clearly than we would like. This does not mean that we ignore imperfection but that we deal with it in an understanding and forgiving manner. The most egregious example of the absence of this virtue, realized as an act of *hubris* (as defined by Aristotle in *Rhetoric*), followed a statement made by Gillian Sankoff in discussing a paper at the International Conference on Pidgins and Creoles in Hawaii, 1975). She had barely begun to sit down when someone near me jumped up and exclaimed: 'Bull …' With this proem he proceeded with his argument.

IV. Be considerate and grateful. From young people you might expect it—they haven't grown up yet; they haven't learned their

> manners; they take us for granted—we are paid, they think, to do what we do. So we support their applications and write recommendations and continue doing so throughout our careers even when only a few express their appreciation. Presumptuousness among professionals is harder to explain. Our lives would be a lot more pleasant and our tasks lighter if we were polite with one another. Not aware of all my sins, I recognize nonetheless some of them. For example, I should have been in touch with my teachers from time to time. I failed to do so with a reason, but it was immoderate modesty—they would not be interested in what I was doing. I will here rectify another failure: Never expressing my gratefulness to those who put their trust in me. Murray Emeneau, for example, director of graduate studies in linguistics at the University of California at Berkeley: when he informed me in 1956 that Latin was required for the Ph.D., I studied it on my own. In time I reported to him that I was reading Caesar. He took my word for it.

It takes no courage to recommend these for inclusion in a code of ethics. For others that might at least be considered I do not have the courage. I hesitate taking on the role of academia's Savanarola, especially because certain activities, while not talked about, are commonly practiced. To me some are as unethical as plagiarism—others beneath the dignity of society's intellectual leaders.

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Dissertation Abstracts

Resolving Hiatus

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An examination of 91 languages which resolve hiatus through Vowel Elision and/or Coalescence (merger) reveals two correlations that pose interesting challenges for phonological theory:

1. In several contexts, the vowel targeted by Elision is universally predictable. At (non-function) word boundaries[*] for example, languages consistently elide the leftmost (word-final) vowel.
2. The type of Coalescence possible in a language depends on the language's vowel inventory. While seven-vowel systems coalesce /a+i/ to [ε], for example, nine-vowel systems realize this same sequences as [e].

These generalizations are analyzed within the framework of Optimality Theory.

My analysis of Elision assumes that languages make greater effort to preserve features occurring in certain phonetically or semantically prominent positions (e.g. in roots). Corresponding to these are a series of position-sensitive Faithfulness constraints requiring preservation of features in these positions. The possible rankings of these constraints yield an Elision typology in good agreement with attested patterns.

The Coalescence correlations strongly suggest that the height features of a vowel depend on the inventory in which the vowel occurs—a claim supported by other facts as well. I propose that (auditorily defined) height features are assigned to vowel systems via best satisfaction of a set of constraints on height specification—for example a constraint requiring minimal use of certain features. The specifications assigned to a given vowel system will, in conjunction with a uniform ranking of Faithfulness constraints that characterizes Height Coalescence across all the systems, correctly generate the possible patterns in that type of system.

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[*] I am using '(non-function) word boundary' to mean a boundary between two words, neither of which is a function or grammatical word (e.g. articles, auxiliaries, etc.).

In its prototypical form, Elision is POSITION-sensitive—the elided segment is the one that occupies a particular position. (Symmetric) Coalescence, on the other hand, is FEATURE-sensitive—the resulting vowel retains the most preferred features from the original vowels. Also attested however are a 'Feature-sensitive' Elision process in which the vowel preserved is the one which possesses particular feature(s), and a type of 'Asymmetric' Coalescence in which positional and featural preferences play a role. All four processes are correctly generated by the analysis, arising under different permutations of the same constraints posited to account for Elision and Coalescence in their prototypical incarnations.

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The use of evaluative devices in the narrative discourses of young second-language learners

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The narrative skills of YOUNG second-language learners have not attracted much attention from researchers in the field of second-language acquisition. This study describes and seeks to explain, some of the regularities of L2 narrative development and also some of the inherent variability which is found in any corpus of L2 performance data.

The focus of enquiry is Labov's model of narrative structure and the distinction made between referential and evaluative functions in narrative, especially the phonological, lexical, and syntactic devices young L2 learners use to carry out these functions of moving the plot-line forward and articulating the narrative point. The particular focus is evaluation, but a somewhat broader view of the notion is taken than that of Labov (1972a) and the study draws on, among others, the work of Polanyi (1981a), Tannen (1982b), Wolfson (1982), and for child language, Bamberg and Damrad-Frye (1991).

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Reviews of Books

From sound to discourse: A tagmemic approach to Indian languages. (CIIL—conferences and seminars series, 9) By J. C. SHARMA, ed. Mysore, India: Central Institute of Indian Languages, 1992. 338 pp.[1]

Reviewed by JOAN BAART[2]
SIL—West Eurasia Group

This volume is the belated outcome of a four-week course in tagmemics, conducted in 1980 by Dr. Kenneth L. Pike, Evelyn G. Pike, and Edgar Travis at the Central Institute of Indian Languages in Mysore, India. Participants were twenty-eight Indian scholars, out of whom eighteen contributed to this volume. The papers in this volume report on project work done during the time of the course. The foreword to the volume, written by Dr. Pike on November 8, 1980, suggests that by that time he had already seen the papers in first draft.

The long delay before publication might be seen as disappointing, but given realities on the South-Asian subcontinent, and given the technical challenges of editing and printing phonemic data, workcharts, tree diagrams, and fold-out pages, it is nothing short of a miracle that this book has come out at all, and the editor and publisher are to be congratulated on successfully seeing the project through to completion.

In addition to the papers by Indian scholars, the volume contains two contributions written by Dr. Pike. The first one is a reprint of Pike's paper for the 11th International Congress of Linguists in 1974, 'Recent developments in tagmemics'. It is included in this volume to serve as an introduction to the main concepts of tagmemic theory. The other contribution, 'An autobiographical note on my experience with tone languages', was written especially for this volume. Pike's 1948 work, *Tone languages*, is a classic and still a starting point for phonologists today writing on tone. In that light, many people will find it interesting to read Pike's account of his intellectual development in the area of tone.

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[1] This book is available for $5.00 from the SIL Bookstore, ILC, 7500 West Camp Wisdom Road, Dallas, TX 75236.

[2] Thanks to Ron Trail for helping me with this review. He is not responsible, though, for any remaining shortcomings.

The other work in this volume applies tagmemic theory to a range of languages representing the four major language families of India. Of the languages studied in this volume, five are Indo-Aryan (Oriya, Gujarati, Hindi, Assamese, and Bengali), four are Dravidian (Kannada, Malayalam, Telugu, and Tamil), three are Tibeto-Burman (Lushai, Angami Naga, and Mishmi), and one is Austro-Asiatic (Santali).

A wide range of aspects of tagmemic theory is covered in this volume. Two papers are concerned with the phonological hierarchy, seven papers are mainly concerned with the grammatical hierarchy, and the remaining nine papers address aspects of both the referential and grammatical hierarchies. Also, one will find some attention devoted to morphology, quite a bit of attention devoted to basic clause structure, and even more attention devoted to higher-level structures.

For many of the contributors to this volume, the 1980 course in Mysore will have been their first in-depth exposure to tagmemics, and probably these papers represent their first attempts to apply the theory to their languages. This book, then, is not the place to find revolutionary insights and flawless analyses. As Pike puts it in his foreword:

> The present volume tries to make the first steps of these scholars traceable by others who might wish to follow them. Some of the steps are cautious, and preliminary—fuller development and more precise testing in local context must wait for the mature work of these and other scholars.

This volume, in its turn, was my own first exposure to tagmemics. I had to read the book twice. The first time around I was mostly unable (notwithstanding a modest familiarity with South-Asian languages and a background in one or two contemporary grammatical theories) to understand what it was all about. I then studied the 1982 edition of the Pikes' textbook, *Grammatical analysis*, a project I had already been planning to undertake anyway. Next, I returned to the book under review and, lo and behold, this time it was perfectly clear to me what the authors were trying to do.

I have been thinking about this experience. If this book is representative of tagmemic work, then the conclusion must be that tagmemics is esoteric. This has been indicated by others, too. In *Language* 71/4 (December 1995), in a review of the first four volumes of *Languages of the World/Materials* published by LINCOM Europa, the reviewer says about these volumes:

> They are written in a user-friendly way, avoiding traditions of descriptions that many people find opaque. For example, Killingley has previously (1982) published a description of Malayan Cantonese that is more detailed than her contribution here. However, the tagmemic framework in which the earlier work was written is one that many people find difficult to follow, and many linguists might find the newer, shorter work more readable.

This charge does present a problem. Of course, there are quite a few other linguistic theories around that use highly specialized vocabularies and notations. Only one of these theories has also availed itself of the rhetoric needed to draw a large number of followers and to become widely taught. I am referring, of course, to Chomsky's theory in its many successive shapes. A few other theories have gained a certain popularity among computational and other formally-inclined brands of linguists, but in the case of tagmemics, esotericism seems to defeat the purposes of the theory—at least insofar as these purposes have to do with the production of grammatical descriptions that play a practical role in language development projects.

I have not yet worked extensively with the tagmemic framework. My impression is that it has tremendous heuristic value for the descriptive linguist. It equips the analyst with an agenda, a plan of attack, for exploring and inventorying the structure of a language, and this agenda is more comprehensive and elaborate than those provided by other theories that I know. There is no question, then, as to the value of tagmemic theory as a tool for linguistic analysis. There is a question as to the usefulness of the grammatical descriptions that constitute the output of the theory. The theory is good for the author of a grammar, but not for the user of a grammar.

This volume is an embodiment of that paradox: many potential readers are going to be bogged down by this idiosyncrasies of tagmemic writing; but at the same time it is clear from many pages of the book how the theory has served as a catalyst and a guide for the authors in their research projects. The paradox can be resolved if tagmemics is seen, not as a rigid format for published descriptions, but rather as the 'intermediate scaffolding' (Pike and Pike in their preface to *Grammatical analysis*) by means of which different kinds of grammatical descriptions can be erected according to the needs of the intended audience.

Notwithstanding the questions raised here, I do hope that the publication of this volume will spark a renewed interest in tagmemics and its concerns among the scholars working on Indian languages.

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The Cambridge encyclopedia of the English language.
By DAVID CRYSTAL. Cambridge: Cambridge University Press.
1995. 489 pp. Hardback $49.95

Reviewed by DAVID BEVAN
SIL—Papua New Guinea

Like Crystal's previous *Cambridge Encyclopedia of Language* (reviewed in *Notes on Linguistics* 59), this large colour 'coffee table' work is thematically rather than alphabetically structured. It consists of six sections:

'The history of English', with chapters on old, middle, early modern, modern, and world English.
'English vocabulary', discussing the nature, sources and semantic structure of the English lexicon, etymological issues, and such concepts as swearing, jargon, PC, graffiti, proverbs, clichés, etc.
'English grammar', including morphology, word classes and syntax.
'Spoken and written English', covering English phonetic, phonological and orthographic issues.
'Using English', discussing regional variation (including English-based pidgins and creoles), social variation, and personal variation in the use of English.
'Learning about English', covering child-language acquisition and corpus-based approaches to the study of English.

At the end are three indexes (linguistic terms, authors and personalities, and topics) and four other appendices (glossary, symbols and abbreviations, references, and recommendations for further reading).

The encyclopedia is very attractively produced. The basic organization in the book is the double-page spread devoted to a particular topic. Sentences never cross turn-over pages, and most subjects are treated within a single spread. Almost every page incorporates colour photographs, newspaper cuttings, poems, advertisements, cartoons, and other examples to illustrate the topic under discussion. In every section there are numerous cross-references to other pages which definitely makes this a book for 'dipping into'—following these 'hyperlinks' from one topic that attracts your attention to another—rather than reading sequentially.

The encyclopedia doesn't aim to be totally comprehensive (probably an unrealistic aim anyway) and to some extent reflects the author's personal interests and biases. One notable emphasis is the anti-prescriptive stance he strikes throughout the work. Perhaps this reflects his perceptions of the intended readership. Another noticeable feature (not surprising in a book written and published in the United Kingdom) is its UK-centricity. For example, there are 18 pages discussing the regional variation of English in Britain (England, Scotland and Wales), but only 18 pages to cover regional variation in the U.S., Canada, Australia, New Zealand and South Africa together.

Despite being aimed at the 'general reader', there is much in this book to interest the professional linguist, perhaps especially for those who focus most of their energies on the minority languages of the world or on a particular micro-domain of the study of language. The breadth of the presentation is stimulating. To give a flavour, here is a short selection of snippets that this reviewer found of interest:

> The creativity of Old English ***kennings*** (vivid figurative compounds), p. 23: ***hronrâd*** 'whale-road' for the sea, ***bânhûs*** 'bone-house' for a person's body, ***beadolêoma*** 'battle-light' for sword, ***glædmôdnes*** 'glad-moodness' for kindness.
>
> Josh Billings' bad spelling and rustic philosophizing, p. 84: 'Chastity iz like an isikel. If it onse melts that's the last ov it'.
>
> Estimates of active and passive vocabulary, p. 123: 30,000 (office secretary) to 60,000 (lecturer) and 40,000 to 80,000 respectively.
>
> The etymological history of the scientific term 'boojum', p. 139: chosen by David Mermin from Lewis Carroll's poem 'The Hunting of the Snark' to designate 'any surface point singularity the motion of which can catalyze the decay of a supercurrent'.
>
> Hyponymic hierarchies, p. 166: Gorgonzola, cheese, food, material, substance, quality, character, nature, essence.
>
> Stephen Leacock on split infinitives, p. 195: 'We might even be willing to sometimes so completely, in order to gain a particular effect, split the infinitive as to practically but quite consciously run the risk of leaving the *to* as far behind as the last caboose of a broken freight train."
>
> Graphemic symbolism—the meanings of X, p. 268: kisses, wrong, Christ(ian), adult, unknown, choice, location, multiply, chess capture, sexual hybrid, magnification, ten, etc.
>
> Words which it seems impossible to spell, p. 274: *they sambaed* or *they samba'd*? *an anoraked figure* (suggesting /ei/) or *anorak-ed*? *the current arced* (suggesting /s/) or *arcked* or *arc-ed*? *mascaraed eyelids*?

> The language game of political debate (and its challenge to 'relevance theory'), p. 378: Politics is not a setting in which the participants are willing to assume (as some maxims of conversational theory suppose) that each person is telling the truth, or attempting to communicate in a succinct, relevant, and perspicuous way. On the contrary, most politicians seem to work on the assumption that what their opponent says is a tissue of lies, side-issues, irrelevance, and waffle.

> The whimsical definitions in Chambers' dictionary, p. 442: e.g. *éclair* a cake, long in shape but short in duration, with cream filling and chocolate or other icing; and *jay walker* a careless pedestrian whom motorists are expected to avoid running down.

Other topics that caught this reviewer's attention include: a poetic riddle from the *Exeter Book* (p. 12); the impact of the Wycliffite Bible on the vocabulary of English (p. 48); Burgess's 'drunkard's calendar' (p. 134); Miles Kington's 'catechism of clichés' (p. 228); a table of the possible word-initial sCCV combinations (p. 243); sexist language and the conception of God (p. 368); scientific English (p. 372); weather forecasts, especially the formulaic character of the Met. Office shipping forecast (p. 385); sports commentaries (pp. 386–387); Heineken beer adverts (p. 389); religious language and a poem called 'Gaardvark' comparing God to an aardvark(!) (p. 403); jokes—verbal, graphological, phonological, morphological, lexical, syntactic and discourse (pp. 404–411).

No doubt other readers would choose a totally different selection to depict the diversity of topics in this entertaining and informative encyclopedia.

REFERENCE

Crystal, David. 1987. The Cambridge Encyclopedia of Language. Cambridge: Cambridge University Press.

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Metrical stress theory: Principles and case studies. By BRUCE HAYES. Chicago: University of Chicago Press. 1995. 470 pp. Cloth $90.00, paper $29.95.

Reviewed by H. ANDREW BLACK
SIL—Mexico Branch

Word stress systems among the world's languages display an amazing panoply of patterns. Are these patterns totally unrelated to each other or is there a small set of principles one can use to account for the wide variety? Hayes' book takes the latter approach. It lucidly presents a parametric theory of stress that adequately covers an impressive amount of data (it includes analyses of some 150 languages). The theory is founded on the notion 'that stress is the linguistic manifestation of rhythmic structure' (p. 1). At the same time, the book successfully walks the fine line of being both an introductory text and a resource book on the subject of metrical stress. Whether you merely have a basic understanding of the concepts of generative theory or whether you are already well-versed in generative approaches to metrical theory, you will find this book useful and interesting.

This, of course, is not the only extant material on metrical stress theory. Besides Hayes' own thinking, it reflects ideas from the work of Liberman (1975), Liberman and Prince (1977), Hammond (1984) and Halle and Vergnaud (1987), among others. I found this book to present a much more constrained theory than that of Halle and Vergnaud (1987).

After introducing the book, Hayes discusses the essence of stress itself in Chapter 2. The next chapter sketches a typology of stress and stress rules and thus motivates the proposed parametric theory which is summarized as follows (p. 54):

a.	**Choice of foot type**	
	i. SIZE	Maximally unary/binary/ternary/unbounded
	ii. QUANTITY SENSITIVITY	Heavy syllables (may/may not) occur in weak position of a foot
	iii. LABELING	Feet have (initial/final) prominence
	iv. OBLIGATORY BRANCHING	The head of a foot (must/need not) be a heavy syllable
b.	**Direction of parsing**	Left to right/right to left
c.	**Iterativity**	Foot construction is (iterative/once only)
d.	**Location**	(Create new metrical layer/applies on existing layer)

After this, Chapter 4 motivates and adequately describes the proposed metrical foot inventory (syllabic trochees, moraic trochees, and iambs). Chapter 5 finishes the core of the theoretic presentation by discussing various implications of the foot inventory in building the metrical structure of a word.

The theoretic discussion is followed by a long series of case studies in Chapter 6. These are organized by the three kinds of metrical feet. This chapter should be especially useful for the field linguist who is seeking to describe the stress system of a language.

Chapter 7 takes a closer look at the theory of syllable weight and proposes that there are actually two theories in operation: theory of syllable quantity and a theory of syllable prominence. As elsewhere in the book, the proposals are clear and well illustrated. Chapter 8 provides an account of ternary stress systems. Phrasal stress is addressed in Chapter 9 and the final chapter provides a nice synopsis of the theory proposed in the book.

This book is an extremely valuable resource for a field linguist attempting to describe a stress system. Its clear, well-illustrated prose along with its ample set of case studies and adequate indices should enable a field linguist to quickly determine the stress system of their language. Furthermore, if the stress system of the language being considered cannot be analyzed by Hayes' theory, then chances are excellent that this stress system will be of great theoretic interest.

REFERENCES

Halle, M. and J-R. Vergnaud. 1987. An essay on stress. Cambridge: MIT Press.

Hammond, M. 1984. Constraining metrical theory: A modular theory of rhythm and destressing. University of California, Ph.D. dissertation, Los Angeles, CA. [Distributed by Indiana University Linguistics Club, Bloomington].

Liberman, M. 1975. The intonational system of English. Massachusetts Institute of Technology Ph.D. dissertation, Cambridge, Mass. [Distributed by Indiana University Linguistics Club, Bloomington].

______ and A. Prince. 1977. On stress and linguistic rhythm. Linguistic Inquiry 8:249-336.

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Phonology and phonetic evidence . By BRUCE CONNELL and AMALIA ARVANTI, eds. Papers in Laboratory Phonology IV. Cambridge: Cambridge University Press. 1995. 416 pp.
Hardcover $64.95, paperback $27.95

Reviewed by MIKE CAHILL
SIL—Ghana Group and Ohio State University

When someone proposes a phonological analysis of a language, is the analysis a reflection of what is 'really there' in the language, or just a reflection of how clever we linguists can be in our theories? The last several years have seen an increasing amount of activity in the area of testing phonological proposals in the phonetics laboratory, both by direct physical measurements on people's speech and experiments on how people perceive speech. The area of 'laboratory phonology' has now become an established discipline within linguistics dealing with the interface between phonology and phonetics. For those who like a scientific/statistical approach to life, this is an area of linguistics that should appeal to you.

The current volume is a collection of papers presented at the Fourth Conference in Laboratory Phonology held at Oxford University in 1993. It is divided into three sections: Part I focuses on the status of features, Part II on prosody, and Part III, the largest, on the organization of 'Articulatory Phonology'. One of the strengths of the volume is the response papers. For most of the main papers there were substantive responses written which commented extensively on the issues involved. To review all the papers would be impractical here, so to give the flavor of the book I will report on one paper from each section—I hope a representative one.

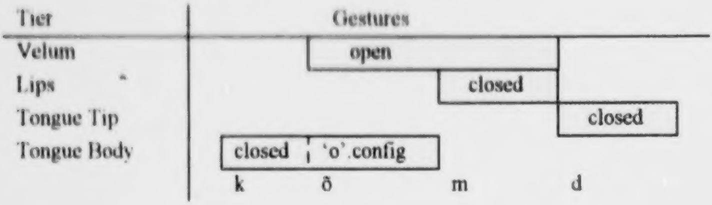
Part I had four papers on features. 'On the status of redundant features: the case of backing and rounding in American English' by Kenneth de Jong dealt with a classic question: when the features [back] and [round] are not contrastive in vowels of a language, which is more basic and which is redundant? In American Midwestern English, the value of [round] is predictable from other features of a vowel: a [+low] vowel is [-round], a [-low, +back] vowel is [+round], etc. Therefore [round] can be eliminated from the set of *distinctive* features for vowels. If so, then the backing position of the tongue should be fairly consistent but the rounding position of the lips should be more variable. De Jong used X-ray microbeam data in which small metal pellets were glued to the tongue, jaw, and lips, and subjected to microdoses of X-rays to record the actual movements of the articulators.

What he found was that there was a reciprocal relationship between backness and rounding. When the tongue was less backed, there was more rounding; when there was more backing, there was less rounding. From an acoustic point of view this is eminently reasonable. Both backing and rounding contribute to a lower second formant (F2) in a spectrographic record. This value of the F2 is what is constant and lets the hearer identify what vowel is uttered. The rest of the paper is concerned with how to tie this result in with current feature geometries, though no definite conclusions are reached.

Part II had four papers on prosody. Two papers and a response deal with 'stress shift' in English—also called the Rhythm Rule. This rule changes the stress on words when there would otherwise be adjacent primary stresses ('stress clash'). For example (using capitals for stress), when we put thirTEEN and COLLeagues together, something happens to the stress on thirTEEN and we perceive something like THIRteen COLLeagues. One debated question is whether the stress on thirTEEN is actually shifted or rather is deleted (THIRteen or thirteen?). Vogel, Bunnell, and Hoskins, in 'The phonology and phonetics of the Rhythm Rule', report two experiments. In the first, they recorded people reading sentences containing phrases like 'thirteen COLLeagues, thirteen caDETS', that is with and without stress clash, and analyzed the recordings of 'thirteen' instrumentally.

Cross-linguistically, stress can be correlated with duration, pitch, and/or amplitude. VB&H found that the second syllable of 'thirteen' had shorter duration and lower pitch when it was in the clash position than when it was not. (Amplitude was not affected.) But the first syllable of 'thirteen' was not affected in any way. Thus the measurements definitely supported the notion that the primary stress on 'thirteen' was deleted, not shifted. Then in the second experiment they used the recordings from experiment 1 and asked listeners to mark which syllable of 'thirteen' was stressed. In the clash environments there was a tendency to say the first syllable of 'thirteen' was stressed—much more than the acoustic measurements would have justified. One relevant lesson of these experiments for the field worker is that perception does not always agree with acoustic reality!

Part III was devoted to Articulatory Phonology as developed by Browman and Goldstein (1989, 1990, 1992). Articulatory Phonology uses *gestures* as its primitive units, rather than features. Each gesture belongs to a tier, and all the tiers together make up the gestural score. A partial gestural score for the word 'combed' is illustrated below. (It reminds me quite a lot of 'phase diagrams' in my SIL Phonetics course in 1980!)



In contrast to phonological features, the gestures above use timing as an integral property affecting the phonetic output. For example, if the opening of the velum above was shorter in duration, we would have [kõmbd]. Adjusting the timing of the individual gestures can be used to account for phenomena like 'intrusive stops' ('tense' pronounced as [tɛnts]), and assimilation, which is the subject of the paper, and will be discussed here.

Elizabeth Zsiga wrote on 'An acoustic and electropalatographic study of lexical and postlexical palatalization in American English'. When you have a sequence /s y/ in English, it is often pronounced as [ʃ]. Some cases are lexical (within words), as in 'impression' (compare 'impress'), and some are post-lexical (across word boundaries), as in 'press you' /prɛs yu/ → [prɛʃu]. Besides these two cases in which [ʃ] comes from underlying /s/, there are underlying /ʃ/ cases as well—as in 'fresh'. Zsiga studied all three of these cases, both acoustically, using spectrograms, and also with electro-palatography (in which an artificial palate embedded with electrodes is inserted in your mouth, and a computer connection tells you exactly where your tongue is making contact). She found there was no difference in acoustics or tongue articulation between the underlying ʃ in 'fresh' and the derived ʃ in 'impression.' However, in 'press you', there was a gradient effect—the consonant started acoustically as [s] and ended as [ʃ]. Zsiga interprets this in Articulatory Phonology terms as an overlap of gestures; the palatal constriction for /y/ overlaps in time with the alveolar constriction for /s/. Thus the fricative changes from [s] to [ʃ]. In contrast, there is a complete assimilation in 'impression', and this, Zsiga feels, is better handled by a more traditional feature-based phonology in which a feature is firmly either [+] or [-]. The Articulatory Phonology approach is better at dealing with post-lexical processes, with their gradient effects. The question, of course, is whether Articulatory Phonology is crossing the line into phonetics territory.

What kind of equipment is needed to perform the types of experiments in this volume? We are often daunted by visions of multi-million dollar laboratories with equipment which takes years of training to be able to use properly. Such establishments do exist, but there are experiments which are well within the reach of 'Ordinary Working Linguists' (OWLS). We OWLS can use such tools as CECIL to measure duration, pitch, and amplitude, making sure to do enough measurements to ensure validity. Since we have access to languages which few others do, we can provide valuable information to the linguistics community at large on these issues, as on others. The greater problem is that the OWL often has no idea what type of experiment would be interesting or valuable to others. For that, we need to rely on our linguistics consultants.

This volume would mostly benefit workers who want more proof of a phonological theory than just the fact that it hangs together and explains a few things, and have enough of a scientific mentality to plow through detailed descriptions of experiments.

REFERENCES

Browman, C. P. and L. Goldstein. 1989. Articulatory gestures as phonological units. Phonology 6:201-251.

_____. 1990. Tiers in articulatory phonology, with some implications for casual speech. In Papers in laboratory phonology I: Between the grammar and physics of speech. J. Kingston and M. E. Beckman, eds. Cambridge: Cambridge University Press, 341-376.

_____. 1992. Articulatory phonology: An overview. Phonetica 49:155-180.

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Even. By ANDREI L. MALCHUKOV. 1995. Languages of the World/Materials 12. München and Newcastle: LINCOM EUROPA. 44 pp. Paper $16.

Reviewed by JOHN M. CLIFTON
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Even is one of the languages in the Tungisic group of Altaic languages. Most of the previous work on Even is in Russian, and thus is not accessible to many of the world's linguists. This makes this general sketch written in English by Andrei Malchukov of the Academy of Sciences in St. Petersburg, Russia, especially welcome. It should be of interest to many linguists including those interested in the languages of Russia, those interested in language universals, and those interested in how to present grammar sketches.

Although the book is short, it does an admirable job of presenting both a general overview of Even grammar, and a more detailed discussion of especially interesting aspects of Even syntax. This is done by dividing the presentation into two main parts. Part 1 gives a brief overview of the phonetics/phonology, morphology, and syntax of Even in 21 pages. Part 2 then presents more detailed observations on four syntactic constructions of particular interest in 18 pages. The book ends with an appendix including an interlinear text and a bibliography of works referred to in the text as well as general works on Even.

In part 1, Malchukov shows that like other Altaic languages, Even exhibits vowel harmony, is agglutinative (suffixal), and is accusative and head-final. The section on morphology includes both the standard charts as well as examples of the various morphological classes in context; thus it actually includes many clause-level phenomena. The section on syntax includes a discussion of subordination and other 'complex constructions' including relative clauses. In part 2 Malchukov examines adversative constructions formed by the addition of a verbal suffix, reciprocal constructions, agreement and raising of attributes to head position in noun phrases, and relativization.

While the approach is generally descriptive, Malchukov feels free to present the data in a theoretical framework when appropriate. This includes the framework of Keenan and Comrie (1977) when discussing relativization strategies, a prototype model when analyzing the use of attributes in head position, and Relational Grammar's initial and final grammatical relations when presenting adversatives and reciprocals. Even when I did not recognize the source of some term (like 'converbs'), the meaning of the term was clear from its usage.

There were a few aspects of the book that were frustrating. The most serious for me is that many of the examples are referred to in multiple places by the example number. This means that the reader must regularly flip back and forth between the text and examples. In addition, it means that fewer examples are presented overall than if different examples were presented for each feature discussed. Less serious problems were the lack of white space between paragraphs and occasional typos (sometimes in the glosses).

In spite of these problems, this book is well worth looking at for anyone who wants an idea of how to effectively present a grammar write-up. If you are also interested in Altaic language in general or more specifically of those of Siberia, the book will be of added interest.

REFERENCE

Keenan, Edward L. and Bernard Comrie. 1977. Noun phrase accessibility and universal grammar. Linguistic Inquiry 8:63-99.

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Linguistic categorization: Prototypes in linguistic theory, 2nd ed.

JOHN R. TAYLOR. Oxford: Clarendon Press. 1995. Pp. 327.
Hardback $59.00, paper $19.95

Reviewed by GEORGE HUTTAR
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One way or another, most field linguists today are aware of the notion of 'prototype', a notion which has become a standard tool in the linguist's kit over the last decade or so, developed originally by Eleanor Rosch (1975), with Lakoff (1987) probably being the best known exposition of it. *Linguistic Categorization* (LC) is a clear, helpful, and stimulating exploration of the prototype approach and its application to a wide range of questions about language and about languages. The following brief remarks will not come close to doing justice to the rich usefulness of looking at languages (and cultures) from a prototype point of view.

The general idea of prototypes is that whether something X 'is a' Y or 'belongs to the category' Y is a matter of degree, not of either/or. So to a question like, 'Is an avocado a fruit?', instead of the only appropriate answers being either 'Yes' or 'No', appropriate answers include, 'Well, sort of, but an apple is a better example of a fruit' or 'Yes, in that it grows on trees and you can eat it—but on the other hand, you can put it in a salad with [other] vegetables'. The mention of an apple is clearly an appeal to the prototype idea: apples are 'better', more central, more prototypical examples of fruit than avocados, which are at best peripheral members of the category FRUIT.

Using the familiar domain of color terms, Chapter 1 (1-20) introduces the contrast between the classical ('Yes' or 'No') and prototype views of categories, as 'two approaches [that] are symptomatic of two equally divergent conceptions of the nature of language' (16). The first, represented by both structuralism and the generative-transformational paradigm, Taylor calls 'autonomous linguistics': a language is a system separate from and independent of the rest of our experience, including all the experience that a language is [designed and] used to talk about. 'Cognitive linguistics', by contrast, sees a language as clearly reflecting and affected by the rest of our experience—sensory, cognitive, interpersonal, and more. Lakoff, Langacker, Wierzbicka, Givón, and Slobin (see REFERENCES) are among current linguists advocating this approach—the approach assumed throughout the rest of LC.

Chapter 2, 'The classical approach to categorization' (21-37), describes the classical approach in terms of four assumptions:

> (1) Categories are defined in terms of a conjunction of necessary and sufficient features...
> (2) Features are binary...
> (3) Categories have clear boundaries...
> (4) All members of a category have equal status (23-24).

The application of this approach in phonology eventually developed some further assumptions: features are primitive (not decomposable into smaller units), universal, abstract (they 'do not characterize the observable facts of speech' [26]), and innate. The same assumptions came to be held about syntactic and semantic features. To illustrate from semantics, these assumptions have meant that an avocado either is or is not a fruit, that it is as fully a member of the 'fruit' category as an apple, and that the way you can tell if an avocado is a fruit is simple: just look at your list of features that defines 'fruit', and check whether an avocado has all those features—since anything either has or does not have a particular feature. You proceed similarly to decide whether a [w] (or a /w/) is or is not a consonant. Other interesting questions: 'Is this sound voiced?', 'Is this sentence grammatical?', and 'Is *eat* a transitive verb?' All have just two answers: 'Yes' or 'No'.

Chapter 3, 'Prototype categories: I' (38-58), 'review[s] some of the better known empirical findings which point to the need for a non-Aristotelian [i.e., non-classical] theory of categorization' and briefly 'consider[s] ... the potential relevance of these findings to linguistic inquiry' (38). It gives clear evidence for prototype phenomena—like fuzzy boundaries of categories, and some members of a category being perceived as better examples of the category than others—in both 'natural kind' categories, like BIRD, and 'nominal kind', like FURNITURE. Next it explains the notion of 'basic level' categories: within any taxonomic hierarchy, terms at a particular level—like *chair* on the one hand vs. more generic *furniture* or less generic *kitchen chair* on the other—stand out as psychologically most salient (e.g., they are most readily named by native speakers when asked about such things) and often linguistically defined as well.

Chapter 4, 'Prototype categories: II' (59-80), describes prototypes in more detail, including such interesting topics as (1) the difference between 'expert categories' and the 'folk categories' of everyday language use, and (2) 'hedges' like *loosely speaking* and *as such*. For the latter, the notion of prototype helps us understand why the starred sentences (from pp. 77, 79) which follow are at best barely acceptable while the others are clearly all right:

* Loosely speaking, a chair is a piece of furniture.
Loosely speaking, a telephone is a piece of furniture.
* Loosely speaking, a six-sided figure is hexagonal.
An octopus is not a fish as such.
* A bicycle is not a fish as such.

Chapter 5, 'Linguistic and encyclopaedic knowledge' (81-98), states that 'autonomous linguistics assumes a clean separation between a speaker's world knowledge and his purely linguistic knowledge' (81), then goes on to show how difficult it is to really draw the line between those two kinds of knowledge. If *Dogs are animals* is true just by definition, because of what *dog* and *animal* 'mean', can the same be said of *Dogs bark*? For the cognitive linguist (and I quote at length here to give an idea of the kinds of data and argumentation that cognitivists use):

> The context against which meanings are characterized is external to the language system as such. Meanings are cognitive structures, embedded in patterns of knowledge and belief. In stark contrast to the structuralist approach, a meaning is, in principle, independent of whatever other cognitive structures happen to be lexicalized in a particular language. Bickerton ... claimed that the meaning of *toothbrush* is delimited by the meanings of other items in the linguistic system, such as *nailbrush* and *hairbrush*. But is it really plausible that a person who does not have the words *nailbrush* and *hairbrush* in his vocabulary would understand *toothbrush* differently from those people who do know what nailbrushes and hairbrushes are? Surely, *toothbrush*

> derives its meaning from the role of toothbrushes in dental hygiene, and not from paradigmatic contrasts with other terms in the language system. The concept 'toothbrush' has nothing whatever to do with the way people clean their nails, adjust their hair, or sweep their floors (83-84).
>
> In general, we can only understand the meaning of a linguistic form in the context of other cognitive structures; whether these other cognitive structures happen to be lexicalized in the language is in principle irrelevant.

The chapter goes on to explain terms used to refer to that context provided by those other cognitive structures: *domain, schema, frame, script*.

Chapter 6, 'Polysemy and meaning chains' (99-121), extends the prototype approach to the very common phenomenon of categories that include more than one prototype, corresponding to words with more than one meaning. For example, the category BIRD includes, and the word *bird* refers to, various creatures: robins, eagles, hummingbirds, kiwis; but we do not therefore conclude that *bird* has as many meanings as the (kinds of) birds it refers to. By contrast, *school* refers to different kinds of things—educational institutions, trends of thought ('the functionalist school of linguistics'), divisions of a university—for which we are much readier to say that we have more than one meaning for the 'same' word. Though various tests to distinguish monosemy and polysemy are given, the border between the two is found to be fuzzy, as you by now have come to expect in this cognitive approach. (The same goes for the border between polysemy and homonymy: Is *ear* in *ear of corn* the same word as *ear* meaning 'organ of hearing'?) Rather than seeking a single core meaning to the various senses of *school*, Taylor follows a 'family resemblance' model, in which each sense of *school* has something in common with some other sense(s), but not necessarily with all of them, resulting in 'meaning chains'. He illustrates this approach convincingly with a range of senses of the words *climb* and *over*.

The idea of relatedness of meaning basic to the family resemblance model is extended further in Chapter 7, 'Category extension: Metonymy and Metaphor' (122-141)—these two processes underlying many of the relations between meanings in a meaning chain. Taylor briefly treats examples of metonymy of the usual type, like *I have no desire to own a Picasso.* and *Is that kettle ever going to boil?* (In the first example, using an artist's name to refer to a work by that artist is so conventionalized in English that we are not going to want to say that *Picasso* [or *Rubens* or *Warhol*] has two meanings: the artist, and any work of his. In the second example, we may be readier to recognize two related meanings of *boil*: one that applies to materials to be heated to the boiling point and one that applies to the containers in which the material is heated.) But more interesting for trying to understand the grammar of a language—English, in this case—are his examples of 'some preferred patterns of meaning extension which are exhibited, especially, by prepositions' (127): for example, the relationship between a path and any of the points on the path, as in:

> The helicopter flew *over* the city (path)
> The helicopter hovered *over* the city (place) (127)

or that between goal and place, as in:

> We hung the picture *over* the sofa (goal)
> The picture hangs *over* the sofa (place) (128)

Just as interesting is the rest of the chapter, on metaphor but that has received so much attention already I'll leave that for the reader to pursue on her/his own.

In the next five chapters Taylor moves fully into the application of the model to linguistic categories: Chapter 8, 'Polysemous categories in morphology and syntax' (142-157); Chapter 9, 'Polysemous categories in intonation' (158-172); Chapter 10, 'Grammatical categories' (173-196); Chapter 11, 'Syntactic constructions as prototype categories' (197-221); Chapter 12, 'Prototype categories in phonology' (222-238). Chapter 8 looks at categories like PAST, DATIVE, or PLURAL that often have several related meanings in a language. Taylor's first main example is DIMINUTIVE in Italian, where the central meaning of the grammatical category is 'small in size', while other meanings include an overlay of affection to the meaning of a noun (cf. *mamma* 'mother' and *mammina* 'dear mother'), or even the meaning by which *dormire* 'sleep' differs from *dormicchiare* 'snooze', or *parlare* 'speak' differs from *parlucchiare* 'speak (a foreign language) badly'. In a parallel fashion, Chapter 9 considers the many meanings of falling and rising intonation, and high key, in English, showing in each case how the meanings relate to one another in a 'family resemblance' way.

Chapter 10 looks at categories dear to linguists, like WORD, AFFIX, CLITIC, NOUN and VERB. Why does a unit like a word seem to be so useful to so many grammarians, and why do so many languages have a form meaning 'word', given that linguists' attempts to define WORD never manage to help us figure out just how many words there are in a randomly chosen text? Well, once again, some forms, like *ice* and *three*, are centrally, prototypically words. Others, like the *-s* in *yawns* and the *-est* in *dullest*, are just as centrally and prototypically affixes. But what about *the*? Is it a peripheral member of the category WORD, or of AFFIX, or is it something else, such as a clitic? Does *'s* in *the guy in the next office's answering machine* belong to the CLITIC category? How many words are there in *my mother-in-law's ex-husband*? Should I write *wellknown*, or *well-known*, or *well known*?

Similarly, some forms are centrally and prototypically NOUNS (or VERBS, or some other 'part of speech'), while others are rather peripheral members of that category. Prototypical members satisfy all the criteria (e.g., phonological, morphological, distributional) linguists assign to a category while peripheral members satisfy clearly only some of them. In the final section of the chapter, 'The semantic basis of grammatical categories' (190-196), Taylor shows how semantic and syntactic prototypicality tend to go together. For example, nouns and verbs referring to specific referents and events (semantically prototypical nouns and verbs) can take the full range of affixes for nouns and verbs (syntactically prototypical), while those with less specific reference tend to be restricted in their morphology. In the first sentence which follows, *trap* and *bear* are central members of the verb and noun category, respectively, while in the second they are more peripheral, both semantically and syntactically:

> We trapped a bear in the forest
> Bear-trapping used to be a popular sport (194)

Chapter 11 considers central and peripheral members of categories of constructions: e.g. possessive genitive and transitive constructions, using for the latter Hopper and Thompson's 1980 classic. Chapter 12 shows how phonological constructs like phonemes can be profitably viewed as categories with prototypical and peripheral members, as can categories like VOICED SOUND and VOICELESS SOUND.

Although Taylor's position is explicitly contrasted with the generative-transformational paradigm (and other versions of autonomous linguistics), Chapter 13, 'The Acquisition of categories' (239-256), acknowledges the Chomskyan position that a theory of language or of a language must account for how a language is acquired—including how its semantic and grammatical categories are acquired. The classical, autonomous linguistic, approach predicts that children, before they acquire all the semantic features of a particular form, will use it for more referents than adults do (e.g. using *daddy* for all large male humans). The prototype approach, while able to accommodate such overextension, predicts that there will also be under-extension: the child uses a form first only for prototypical referents, gradually extending its usage to more and more forms, possibly changing in the process just what is the prototype, until usage conforms to adult usage. The acquisition of grammatical categories is said to give even clearer evidence for the prototype approach. For example, children learning English tend at first to use verb affixes like past tense markers on only a few verbs, like *fall*, *drop*, *slip*, *crash*, and *break* (all referring to 'highly punctual events' which 'involve a highly salient change in state—usually a change for the worse'). 'Only later does the child extend the past tense to verbs denoting nonpunctual events and nonvisible mental states, like *see*, *watch*, *know*, etc.' (243).

Chapter 14, 'Recent developments (1995)' (257-295), relates the prototype approach espoused in LC to Langacker's (1991) further development of cognitive grammar and to recent discussion of topics like polysemy and basic level terms. The 'historical perspective' section relates the prototype approach to the work of philosophers like Wittgenstein and Austin. (Many readers will notice the resemblance of the prototype approach to Ross's work on 'squishes' [Ross 1972] and Pike's older 'fuzzy category' approach embodied in his 'wave' metaphor—as spelled out for grammatical categories in, e.g. Pike 1970.)

Fourteen pages of references give you plenty of opportunity for following up on topics that especially intrigue you. LC has much to reward the field linguist working on phonological structure, dictionary making, syntactic analysis, or translation. With a little (or more) effort, the fieldworker can also apply its concepts very usefully in coming to understand and describe the culture of which a particular language is a part.

References

Givón, T. 1979. On understanding grammar. New York: Academic Press.

Hopper, P. J. and S. A. Thompson. 1980. Transitivity in grammar and discourse. Language 56:251-299.

Lakoff, George. 1987. Women, fire, and dangerous things: What categories reveal about the mind. Chicago: University of Chicago Press.

Langacker, R. W. 1987. Foundations of cognitive grammar, I: Theoretical prerequisites. Stanford: Stanford University Press.

________. 1991. Foundations of cognitive grammar, II: Descriptive application. Stanford: Stanford University Press.

Pike, K. L. 1970. Tagmemic and matrix linguistics applied to selected African languages. Norman, OK: Summer Institute of Linguistics.

Rosch, E. 1975. Cognitive representations of semantic categories. Journal of experimental psychology: General 104:192-233.

Ross, J. R. 1972. Endstation Hauptwort: The category squish. Chicago Linguistic Society 8:316-328.

Slobin, D. I. 1985. The child as a linguistic icon-maker. In Iconicity in syntax, J. Haiman, ed., Amsterdam: John Benjamins, 221-248.

Wierzbicka, A. 1985. Lexicography and conceptual analysis. Ann Arbor: Karoma Press.

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Computational phonology: A constraint-based approach. By STEVEN BIRD. New York: Cambridge University Press. 1995. 203 pp. $47.95.

Reviewed by Mike Maxwell
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Introduction. Phonology has long been the Cinderella of computational linguistics. Doubtless this is because most computational linguists have worked with English—a language with minimal inflection, and an orthography which is largely unrelated to any interesting phonological processes. More recently, computational linguists (particularly in Europe and Japan) have worked on languages with richer morphologies and phonologies. One such language is Finnish, for which (unlike English) it would be utterly impractical to list all the inflected forms of most words. This work resulted in the theory of 'Two Level Phonology', and a class of phonological/morphological parsers known as 'Kimmo' parsers (after the inventor, Kimmo Koskenniemi). Nevertheless, it is fair to say that theoretical linguists have largely ignored Two Level Phonology.

The book being reviewed aims to redress the lack of attention to phonology in computational linguistics, as well as to capture the attention of theoretical linguists by advancing the theory of phonology.* There are thus two aspects to Steven Bird's contribution: the formalization of a recognized theory of

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* I am indebted to Steven Bird for his remarks on an earlier form of this review. He should not be held responsible for the use to which I have put those comments.

phonology (a version of autosegmental phonology), and a computational implementation of that formalized theory.

It is important to realize what this book is not. It is not an extensive survey of existing results in computational phonology (although there is a brief summary of other approaches). Rather, it is a reflection of the author's view of what phonology SHOULD be, both as a linguistic theory and as an object to be implemented computationally. While Bird feels an allegiance to autosegmental phonology, his formalization is not of autosegmental phonology as described in such recent textbooks as Kenstowicz (1994), nor of the more recent Optimality Theory, but rather of a theory called Declarative Phonology, a sort of autosegmental version of Natural Generative Phonology ('NGP'; Hooper 1976 is a standard reference[1]).

Computational Phonology is a revision of the author's Ph.D. dissertation. It has been well edited and typos are few. Perhaps the only one which could cause problems is in axiom B6 (pg. 140); the correct version is given as 2.51f on pg. 82.

Chapter one begins with a brief overview of autosegmental phonology, then introduces 'declarative phonology'. In this theory, the phonology of a language consists of a system of CONSTRAINTS; a constraint specifies a condition that a word must meet in order to be well-formed. Vowel harmony, for instance, is not viewed as a rule or process that maps a lexical form at one level of representation into another form at a shallower level of representation. Rather, vowel harmony is a constraint that a lexical representation must ultimately meet, namely, that the vowels of a word must agree with respect to the harmonizing feature. Constraint satisfaction is at once a checking operation (if the features specified in the constraint are already instantiated in the relevant parts of the word) and a feature filling operation (if the features are uninstantiated in the word). A constraint can never delink (remove) or change a feature which is already instantiated in a word, regardless of whether that feature was already instantiated in the underlying form or became instantiated by the application of a constraint. Likewise, constraints may build metrical structure but they may not remove or alter existing metrical structure.

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[1] The theory of NGP never enjoyed wide acceptance, which Bird attributes to its inability to represent processes of neutralization. I would say rather that NGP suffered from inexplicitness with a resultant misunderstanding of its claims (cf. Jensen 1978).

In declarative phonology, constraints and lexical representations turn out to be much the same sorts of entities; both are descriptions of possible phonological objects. Rule-like constraints differ from lexical representations in part by what is attached to the phonological description. Lexical representations carry semantic and morphosyntactic information whereas rule-like constraints do not. (The two sorts of constraints also differ in that each 'rule' constraint applies to all phonological objects, whereas lexical entries are individually chosen from the lexicon.) The idea that lexical representations and rules might be similar was proposed earlier (Kiparsky 1982, Bybee 1985), but Bird takes the idea a significant step further by providing a formalization.

Declarative phonology differs from Optimality Theory in that a surface word must satisfy ALL the constraints of the phonology; hence the order of application of the constraints or their ranking is irrelevant. However, a constraint may consist of subconstraints which are ordered among themselves by specificity, i.e. by the 'Elsewhere Principle' (Kiparsky 1973). Since constraints are unordered, there is no derivation from an underlying level to a surface (phonetic) level, and hence no intermediate levels. The result is a 'monostratal' theory of phonology (although it is still possible to talk about underlying forms in the lexicon—perhaps partially underspecified—and surface forms, which are fully specified for all relevant phonological features). However, there is a separate component of the grammar, the phonetics, in which more or less abstract phonological features are translated into articulatory gestures; more on this below.

The second chapter is dedicated to the formalization of autosegmental phonology in first order predicate calculus.

The third chapter, which for many phonologists will be the most controversial, is a critique of arguments against a monostratal approach to phonology. Specifically, Bird defends declarative phonology against two arguments—those showing the need for rule ordering and those showing the need for feature changing rules.

Consider first feature changing rules. In classical generative phonology, the underlying form of a word was fully instantiated—all segments bore a value for every feature. If all features are already instantiated in the underlying form, clearly the application of a phonological rule will be feature changing, if only vacuously so. But a more recent view is that underlying forms are partially underspecified, with uninstantiated features being filled in by spreading from other positions in the word or by rules that fill in default values. In what might be called the 'standard' theory of autosegmental phonology, uninstantiated features may also arise from the application of delinking rules (Inkelas and Cho 1993). As mentioned above, one of the central claims of declarative phonology is that there are no delinking rules. Any feature which is instantiated (linked) in the underlying form remains unchanged—the only source of uninstantiated features is underspecification in lexical representations.[2]

While it is not the purpose of this review to give definitive arguments for or against declarative phonology, it may be helpful to explain why a theory without feature changing or delinking rules might be plausible. Consider a prototypical feature changing process, word-final (or syllable-final) devoicing of obstruents. The well-known case of German will illustrate the point. Voiced and voiceless stops contrast in German, but this contrast is apparently neutralized when the stop is word- (or syllable-) final. There thus appears to be an alternation in certain morphemes between voiced and voiceless stops; such an alternation would imply a feature changing process.[3] Bird, following some published claims, takes the position that there is in fact no such neutralization; devoicing is allegedly often incomplete (and presumably a matter of phonetic implementation rather than the result of a phonological rule).[4] Unfortunately, Bird does not elaborate on this position. In the following I will construct a possible interpretation of the claim that such processes as devoicing are incomplete, basing myself in part on comments in Bird and Ladd (1991). Suppose that

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[2] Declarative phonology is compatible with contrastive underspecification but not, so far as I can see, with radical underspecification, since the latter theory's Feature Specification Defaults are defeasible (nonmonotonic) (see Calder and Bird 1991). The arguments quickly become complex, however, when taking into account the possibility of privative features and the Elsewhere Principle.

[3] Not all cases of voicing alternations would necessarily be feature changing. For instance, if voicing is a privative feature, intervocalic voicing of obstruents might be a feature filling rule. But in German, voiced obstruents must bear the voicing feature in their lexical representation, regardless of whether it is privative, since voiced stops contrast with voiceless stops. Hence devoicing in German would be feature changing, whether it involves the delinking of a privative voicing feature or the delinking of a [+voiced] feature followed by insertion of a [-voiced] feature.

[4] However, Lombardi 1995, footnote 1 calls studies claiming incomplete neutralization of voicing 'flawed'.

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the phonological feature VOICED is more abstract than it is usually taken to be.[5] In particular, suppose a [+voiced] sound need not always be phonetically voiced, although the value of the phonological (distinctive) feature voiced will always be betrayed by one or more related phonetic properties, such as voicing onset time, length of closure, length of the preceding vowel, etc. (Kingston and Diehl 1994). Which phonetic properties realize a given phonological feature may be both context- and language-dependent, the translation between the phonological and phonetic levels being the function of the phonetic component with its own rules. Such an analysis would give substance to the notion of 'displaced contrast' in structuralist phonemics at the cost of making phonological features more abstract—to some extent even removing their grounding in phonetics.[6]

Word-final devoicing is but one instance of a seemingly feature changing (or delinking) process, and making phonological features more abstract will not resolve all such apparent counterexamples to declarative phonology. Another problematical phenomenon is the reduction of unstressed lax vowels in English: [*ˈtɛləˌɡræf*], [*təlˈɛɡrəˌfi*]. In this case, one might explore the question of whether these vowels are actually fully reduced to schwa in 'hyperarticulated' speech (Johnson, Flemming, and Wright 1993), under the assumption that such hyperarticulated speech better represents the output of the phonology than 'citation forms' do. As a last resort, when a contrastive feature is completely and unmistakably neutralized, one could resort to listing in the lexicon both forms of morphemes showing the alternation. This is not unlike the old Item-and-Arrangement view of morphology, but with a twist—only the alternating part of a morpheme need be listed twice. (A similar approach was used in Natural Generative Phonology (Hooper 1976), although it might be traced back further to the morphophonemes of structuralist phonology.) Without entering into the details, a declarative solution would involve representing the lexical entry of

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[5] Alternatively, the putative voicing distinction in Germanic languages might be a fortis-lenis distinction, based on the feature [spread glottis] (Iverson and Salmons 1995). Depending on whether this feature is privative or binary, the solution suggested in the text might prove unnecessary for German devoicing, although a similar case could still be made with a voicing rule, such as that affecting intervocalic *t* in English.

[6] It is not clear that this interpretation is compatible with Bird's discussion of feature systems in chapter four.

an alternating morpheme as a path encoding the allomorphs. That part of the morpheme which does not undergo alternations is a single path; the path forks at an alternating segment, with the forks rejoining after the alternating segment. In the case of word-final devoicing in German, should the neutralization turn out to be complete, the fork could involve just the feature VOICED. This sort of multiple listing is in fact the solution that Bird adopts for deletion processes: a lexical item with a segment that is absent in some phonological environment is encoded with what amounts to an optional segment. Depending on the position in which the morpheme finds itself, either the path with the optional segment or the path without it, will satisfy the appropriate phonological constraints. In either case, nothing is deleted. Rather, the 'deletion' constraint serves to select an allomorph, thus saving the idea that phonology consists of constraint satisfaction. If the feature VOICED is a privative feature, then the analysis of voicing neutralization is exactly analogous to that of deletion. The only difference is in the kind of object which is omitted in one path (a single feature in the first case, an entire 'segment'—a tree of features—in the other).

However, while it is clear that one CAN analyze neutralization and deletion by encoding both forms in the lexical entry, it is not clear to me that one would WANT to. As it stands, there is a duplication of effort between the lexicon and the constraints—the alternation appears in both places.[7] Unless this redundancy is eliminated, impossible languages can be described. For example, one can imagine a language like German except that it has stems with final obstruents that are always voiced, i.e. which do not have an alternative path for a voiceless obstruent. Such stems would be prevented BY THE PHONOLOGY from appearing in unsuffixed form (e.g. in the nominative case), since they could never satisfy the word-final constraint on voicing. It seems unlikely that such a language could exist. Another improbable language would be one with roots having non-final obstruents which were marked in the lexicon as undergoing the voicing alternation but which would always surface in their voiced forms or their unvoiced forms (depending on whether a vowel or consonant followed within the root). There might also be a stem having a final obstruent marked to undergo the alternation, but which would always surface in its voiced (or voiceless) form because of some accident of morphology (it might always need a suffix for syntactic reasons, for instance). In the latter two cases, there would be no overt effect of the lexical alternatives (one of which would never appear at the surface), but it seems odd that a lexical entry could be marked for an alternation that it never undergoes. Similar remarks apply for the analysis of deletion as alternative lexical entries. In sum, this approach will be more convincing when the redundancy can be eliminated. This is not to say the theory is wrong—rather that it is incomplete.

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[7] This point was made with respect to NGP by Harris (1978) and Odden (1979).

The other objection to declarative phonology discussed in chapter three is rule ordering. Classical generative phonology allowed the use of extrinsic ordering to simplify the statement of individual rules. Without such ordering, one rule frequently needs to mention in its environment the effect of another rule. (Bromberger and Halle 1989 is a defense of this approach.) But extrinsic rule ordering is not allowed in declarative phonology. In support of this restriction, Bird analyzes several arguments which are purported to show the necessity of rule ordering and demonstrates that they do not go through. Bird is not alone in this effort. The elimination of extrinsically ordered rules is one of the main occupations of a number of phonologists (Goldsmith 1993a). By eliminating ALL intermediate levels (which themselves constitute a form of ordering), Bird takes matters a step further. As Goldsmith (1993b, p. 32) puts it, '… the proposal that there are three levels is, we may assume, the very minimal assumption that could even be considered.' It should be noted, however, that the separate phonology and phonetics components look rather like distinct levels, albeit of a different sort from the intermediate levels of classical generative phonology or the strata of lexical phonology.

In summary, most phonologists will want more evidence in favor of declarative phonology than is given in this book. Fortunately, there is a more extensive literature concerning declarative phonology and similar approaches, among which are the collected articles in Bird (1991), Ellison and Scobbie (1993), and Paradis and LaCharité (1993); and for comments on the relationship between phonetics and phonology (Bird and Ladd, 1991). Still lacking, so far as I am aware, are in-depth analyses of a single language in which issues such as duplication between the grammar and the lexicon might be explored, or the question of generalizations which are true for only part of the lexicon (such as the Latinate vs. Germanic division in English).

The fourth chapter surveys recent work in autosegmental phonology concerning the internal feature structure of 'segments'. Most of the arguments will be familiar to phonologists, but the formalization is new and important.

Chapter five looks briefly at a computational implementation of the formalization designed to allow testing of phonological theories or analyses within the general framework of declarative phonology. Anyone who has tried to implement a linguistic analysis on a computer soon discovers that linguists are prone to a great deal of hand waving and inexplicitness. Putting this more positively, a computational implementation like Bird's can be an excellent tool for working out the details of one's analysis. The implementation is

> ...a (fully functional) prototype, intended to demonstrate 'proof of concept'. It runs with SICStus Prolog under Unix. The user would need to know how to program in Prolog. It is not something for the field linguist. Rather it is a low-level engine that could conceivably be used as the basis of an application program [Steven Bird, email October 1995].

Finally, chapter six summarizes the results. Chief among these, in my opinion, is that Bird has done autosegmental phonology a service by showing how a monostratal version of that theory can be formalized. (Similar techniques can be used to formalize other varieties of autosegmental phonology—see e.g. Calder and Bird (1991), and Ellison (1994). One of the virtues of *The Sound Pattern of English* (Chomsky and Halle 1968), and work done in that general framework was its rigorous formalism. While autosegmental phonology is clearly a more explanatorily adequate theory of phonology, it has lost much of the precision that characterized that earlier era. It is time phonology returned to that precision. If Bird's book can help in this, it will have succeeded.

REFERENCES

Bird, Steven, ed. 1991. Declarative perspectives on phonology. Edinburgh working papers in cognitive science 7. Edinburgh: University of Edinburgh. Also available at: http://www.cogsci.ed.ac.uk/phonology/wp7-index.html.

_____ and D. Robert Ladd. 1991. Presenting autosegmental phonology. Journal of Linguistics 27:193-210.

Bromberger, Sylvain and Morris Halle. 1989. Why phonology is different. Linguistic Inquiry 20: 51-70.

Bybee, Joan L. 1985. Morphology: A study of the relation between meaning and form. Typological Studies in Language 9. Philadelphia: John Benjamins.

Calder, Jo and Steven Bird. 1991. Defaults in underspecification phonology. Pp. 107-125 in Bird 1991.

Chomsky, Noam and Morris Halle. 1968. The sound pattern of English. New York: Harper and Row.

Ellison, T. Mark. 1994. Phonological derivation in optimality theory. Pp. 1007-1013 in Proceedings of the Fifteenth International Conference on Computational Linguistics (COLING-1994). Kyoto, Japan. Also available by FTP: ftp://ftp.cogsci.ed.ac.uk/pub/phonology/papers/ellison-OTderiv.ps.Z.

Ellison, T. Mark and James M. Scobbie, eds. 1993. Computational phonology. Edinburgh working papers in cognitive science 8. Edinburgh: University of Edinburgh. Also available at: http://www.cogsci.ed.ac.uk/phonology/wp8-index.html.

Goldsmith, John, ed. 1993a. The last phonological rule. Chicago: University of Chicago Press.

Goldsmith, John. 1993b. Harmonic phonology. Pp. 21-60 in Goldsmith 1993a.

Harris, James. 1978. Two theories of non-automatic morphophonological alternations. Language 54:41-60.

Hooper, Joan. 1976. An introduction to natural generative phonology. New York: Academic Press.

Inkelas, Sharon; and Cho, Young-mee Yu. 1993. Inalterability as prespecification. Language 69:529-574.

Iverson, Gregory K., and Joseph C. Salmons. 1995. Aspiration and laryngeal representation in Germanic. Phonology 12:369-396.

Jensen, John T. 1978. [Review of] An introduction to natural generative phonology. Language 54:667-674.

Johnson, Keith, Edward Flemming, and Richard Wright. 1993. The hyperspace effect: Phonetic targets are hyperarticulated. Language 69:505-528.

Kenstowicz, Michael. 1994. Phonology in generative grammar. Oxford: Cambridge University Press.

Kingston, John and Randy L. Diehl. 1994. Phonetic knowledge. Language 70:419-454.

Kiparsky, Paul. 1973. Elsewhere in phonology. In Stephen R. Anderson and Paul Kiparsky, eds., A festschrift for Morris Halle, pp. 93-106. New York: Holt, Rinehart and Winston.

Kiparsky, Paul. 1982. Lexical morphology and phonology. In I. S. Yang, ed., pp. 3-91. Linguistics in the morning calm. Seoul: Hanshin.

Lombardi, Linda. 1995. Laryngeal neutralization and syllable wellformedness. Natural language and linguistic theory 13:39-74.

Odden, David. 1979. Some unnatural consequences of natural generative phonology: A review of an introduction to natural generative phonology by J. Hooper. Linguistic Analysis 5:439-460.

Paradis, Carole and Darlene LaCharité, eds. 1993. Constraint-based theories in multilinear phonology. Special issue of The Canadian Journal of Linguistics 38.

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Mixed languages: 15 case studies in language intertwining.

By PETER BAKKER and MAARTEN MOUS, eds. Studies in language and language use, 13. Amsterdam: Institute for Functional Research into Language and Language Use (IFOTT). 1994. 244 pp.

Reviewed by DAVID PAYNE
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Mixed Languages is a collection of papers primarily from a 1993 workshop at Leiden University organized by Bakker and Mous, along with the editors' own eleven page introduction to the topic.

The editors use the term 'language intertwining' to refer to the '...process forming mixed languages showing a combination of the grammatical system (phonology, morphology, syntax) of one language with the lexicon of another language' (pp. 4-5). Mixed languages arise most commonly from situations like widespread mixed marriages or 'in-groups' such as social risers, male adolescents, educated elites, or nomads maintaining a secret form of communication.

The editors propose the notion of a mixed language as a new type of contact-induced language, in addition to the four types of contact-induced phenomena noted by Thomason and Kaufman (1988), namely shift, borrowing, pidginization and abrupt creolization. With regard to borrowing, for example, cases of extreme borrowing in 'non-mixed' languages rarely exceed 45 percent of the lexicon and do not include core vocabulary. In contrast, mixed languages commonly have a proportion of lexical elements closer to 90 percent and include core vocabulary from a language distinct from that which contributes most of the grammatical structure.

The article by Bakker on Michif gives more detail than the 'Introduction' as to what distinguishes a mixed language from a creole (p. 26):

> Creole languages have a lexicon based on one language, but their grammatical systems are generally not identifiable with one or another other language. Mixing implies at least two components...

coming from two distinct source languages.

More generally, according to the editors, a language can be called 'mixed' or 'intertwined' if there may be nearly equal justification for classifying it into two distinct genetic trees.

The languages (and authors) represented in this volume, along with an indication of the sources of the mixture, are:

Michif (Bakker); Cree (Algonquian) verbs, French noun phrases
Romani (Boretzky and Igla); Indic grammar, lexicon from various European languages for different Romani dialects
Town Frisian (van Bree); Dutch lexicon and stressed morphology, Frisian unstressed morphology
Maltese (Drewes); Arabic grammar, extreme (50 percent or more) lexical borrowing from Italian
Copper Island Aleut (Golovko); Eskimo-Aleut lexicon and some grammar, Russian grammar and some lexicon
Shelta (Grant); Irish-Gaelic lexicon, English grammar
Javindo (Gruiter); Javanese grammar, Dutch lexicon
Island Carib male speech (Hoff); Cariban lexicon, Arawakan grammar
Amarna-Akkadian 14th century B.C. (Kossmann); Akkadian lexicon, Pre-Kanaanite grammar
Ma'a or Mbugu (Mous); Bantu grammar, Southern Cushitic lexicon
Callahuaya (Muysken); Quechua grammar, Puquina (Arawakan?) lexicon
Media Lengua (Muysken); Quechua grammar, Spanish lexicon
Ilwana (Nurse); Bantu grammar; Orma (Cushitic) lexicon
Petjo (van Rheeden); Malay grammar, Dutch lexicon
KiMwani (Schadeberg); KiSwahili and ChiMakonde, both grammar and lexicon, but lexicon appears to lean toward KiSwahili

The editors do not consider Maltese to a true mixed language, with a comparatively low percentage of borrowings. Similar reservation is expressed about Ilwana.

It remains to be seen whether comparative linguists will generally accept the notion promoted here of mixed languages being a distinct type. I have seen reference made to 'mixed languages' in the few years since the publication of this work—some by major players in the field, but seemingly with a degree of caution. It does seem useful to have a way of talking about languages which have their lexicons and grammar from different sources, even if they are considered by some to simply be instances of extreme borrowing.

As might be expected in the printing of a paperback collection of conference papers, there are a few typographical or clerical errors; misspellings or odd wordings. Some examples follow: In the index (page vi) the page numbers for the two articles by Muysken are reversed. On p. 202, the morpheme-by-morpheme gloss for the first word in the first example has five glosses for only four morphemes. On p. 25 is found a somewhat inappropriate wording for formal written English: 'How come there is such a widespread vision among linguists which is ostensively incorrect?' On p. 210, *extend* should be *extent*. Even so, errors are infrequent enough that they do not distract.

REFERENCE

Thomason, Sarah Grey and Terrence Kaufman. 1988. Language contact, creolization and genetic linguistics. Berkeley: University of California Press.

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Electronic performance support systems: How and why to remake the workplace through the strategic application of technology.

By GLORIA J. GERY. Boston: Weingarten Publications.
1991. 300 pp. $29.95.

Reviewed by DOUG TRICK
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[Editor's note: LinguaLinks Library (released May 1996) and LinguaLinks (released October 1996) are Electronic Performance Support Systems that have been developed by SIL for field language workers. For more information contact info_lingualinks@sil.org or visit http://www.sil.org/lingualinks/ on the Web. See also further comment at the end of this review.]

This book consists of 11 chapters plus a good bibliography and topical index. The first four chapters define the need of corporations to improve their performance, and present a claim that this can be accomplished by means of an EPSS (Electronic Performance Support System). Gery defines the elements of an EPSS, and then describes ten case studies (taking up 126 pages—almost half the book) in which various industries in the U.S. have each developed a particular EPSS. The concluding chapters outline various internal factors to be addressed by a corporation which might be developing an EPSS to enhance their performance.

Gery's thesis is that current job performance (particularly in the U.S.) is unacceptably low—competence is rare and is not generally recognized and adequately applied. The reason: inadequate training (usually taken 'out of context', experts are separated from novices, and post-training support is insufficient). She uses an analogy of 'many threads, no loom' to chide industry for having far too many disconnected 'threads' of training, without good integration which enables workers to get to the 'performance zone'.

This is a 'metaphorical area in which things come together '...where the employee's response exactly matches the requirements of the situation' (p. 13).

The goal of an EPSS is 'to provide whatever is necessary to generate performance and learning *at the moment of need*' (p. 34, author's emphasis). It is a 'computer-based system that improves work productivity by providing on-the-job access to integrated information, advice, and learning experiences' (p. 142). The systems described in the ten case studies typically include at least three major components: (a) a large database, hierarchically structured, of information relevant to the particular industry; (b) an 'expert system'—designed to give on-the-spot, timely advice on virtually any matter which an employee would face; and (c) sets of procedures, generally interactive, which would enable the employee to develop specific skills as needed.

I read the book with a view of gaining insight into how linguistic field work (particularly from the perspective of the SIL Corporation) could benefit from Gery's analysis—but also with a critical eye to see where there was a poor match between the SIL experience and that of U.S. business. I'll first mention a few misgivings which I have, and then conclude with some helpful perceptions from Gery's study.

To begin with, I feel that Gery somewhat oversimplifies the problem in her zeal to promote what is a very useful resource (the EPSS). I would agree with her observation that there is a great deal of incompetence and poor performance in the workplace, but it seems to me that she overlooks a crucial factor which may account for much of the incompetence—namely, lack of motivation. If employees do not own the goals of the institution, or if they view the corporation as having unlimited resources (and thus would not suffer by their individual performance deficit), then an EPSS (which can be an fine tool in the hands of one who truly wants to improve his/her work) will have limited value.

Secondly, where Gery contrasts the EPSS training approach with more traditional approaches, it appears that she presents a rather distorted caricature of traditional training programs (pp. 18-19, 34). It was somewhat distracting, as I read the book, to try to formulate a clear understanding of the positive aspects of her proposals, while seeing them contrasted with what in my judgment are somewhat exaggerated weaknesses of alternative processes.

Gery observes that, during the past decade, 'workstations are replacing PC's as the hardware of choice'. That is, it is increasingly common for a business to set up a central, very powerful computer system, to which the employees are linked in a network. (This contrasts with a group of Personal Computers which function independently.) While this trend may be taking place in much of the 'developed' world, the SIL field work context continues to consist primarily of isolated PC's with no prospect of connecting to a larger, powerful computer system on a regular basis. (This could well change in the foreseeable future, but there are definite logistical and other factors faced in SIL field programs which distinguish them from typical business applications in the U.S. Also, an EPSS can be designed to run effectively on a PC—it's somewhat more challenging but not impossible.)

Having dealt with the above concerns, I turn now to some of Gery's insights which can assist us in understanding the SIL field situation and how our performance can be improved.

Her analysis of some of the reasons for less-than-optimum performance would appear to apply in some cases to the SIL situation. Our pre-field training programs have excellent content, but often that content is delivered years before there is opportunity to apply it on the field. Largely because of the geographical diversity of our programs, novices are separated from experts and provision of post-training support is very difficult. Thus, an EPSS might be a particularly valuable resource in our context.

One of the strengths of an EPSS is that it can be designed to give direction in situations where a task is performed only rarely, and where there is thus a tendency to expend considerable time in relearning the task each time, or else take shortcuts and consequently produce lower quality work. The 'wizards' which are built into much of 1990's software seek to address this need. As linguistics field workers, we are committed to excellence but are also committed to a wide variety of goals (e.g., linguistic analysis and description, development of literacy programs and supporting materials, and translation). As such, we often need help with tasks which we perform relatively rarely but which nevertheless ought to be performed well.

A further issue related to the wide range of our field activities is the need for some level of integration. A well-designed EPSS integrates various tasks (accessing critical information, carrying out the primary work [e.g. linguistic research, literacy, and translation], and related functions [e.g. correspondence and donor relations]).

The increasing complexity of the marketplace is one element which has driven the development of computer-based training (CBT) and EPSS design. (An EPSS incorporates CBT, but goes beyond it by including an interactive advisor, called an 'expert system'.) Gery observes the following challenges faced by contemporary business:

- dynamic and frequently changing product lines
- increasing product complexity and sophistication
- need for individual customization
- increasing customer sophistication and expectations for quality

As we reflect on rapid changes in our world and in the situations which we face in carrying out our work, there are striking parallels between such marketplace challenges and those faced by our field workers and administrators:

- continual refinements of theoretical frameworks, and available technologies—some of the 'products' used in our business
- linguistic and sociolinguistic complexities which present scenarios requiring strategies quite different in these 'next thousand languages'
- national and regional socio-political realities which place certain requirements on how we carry out our work

An electronic performance support system is not the final answer to the needs that we face as a Corporation nor as individual field workers. It is difficult to address adequately the interpersonal relationship dimension (especially cross-culturally) in an EPSS. Nevertheless, a well-designed and maintained EPSS can be an extremely powerful tool to facilitate the ongoing accomplishment of our work.

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[Additional remarks from the Editor, in consultation with SIL's Academic Computing Coordinator: The reviewer suggests here that the EPSS scenario does not fit SIL well because 'the SIL field work context continues to consist primarily of isolated PC's with no prospect of connecting to a larger powerful computer system.' While what he says about our PCs being standalone is true, there is an additional key feature of contrast. With an EPSS the issue is not that the multiple workstations in the workplace need to be connected to each other, but that they need to be connected to the large, centralized source of information and helps. LingualLinks accomplish this by sending a CD-ROM to remote field teams. As a result, their computers remain isolated in network terms, but they are plugged into a 400M source of centrally prepared information and helps. A CD-ROM drive in every computer was not part of Gery's model because it was not a reality when the work was published in 1991. But it is a reality now. Consequently, the CD-ROM adequately takes the place of the large central information server.] ■

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Allen, Cynthia L. 1995. Case marking and reanalysis: Grammatical relations from old to early modern English. New York: Oxford University Press. 509 pp. Cloth $95.00.

Bailey, Charles-James N. 1996. Essays on time-based linguistic analysis. New York: Oxford University Press. 423 pp. Cloth $99.00.

Bailey, Kathleen M. and David Nunan, eds. 1996. Voices from the language classroom. Qualitative research in second language education. New York: Cambridge University Press. 480 pp. Hardback $49.95, paper $23.95.

Bierwert, Crisca, ed. 1996. Lushootseed texts: An introduction to Puget Salish narrative aesthetics. Studies in the anthropology of North American Indians. Lincoln: University of Nebraska Press. 325 pp. Cloth $40.00.

Bloomer, Robert. 1994. System-congruity and the participles of modern German and modern English: A study in natural morphology. Hamburg: Helmut Buske Verlag. 124 pp. $58.00.

Briggs, Charles. 1996. Disorderly discourse: Narrative, confllict, and inequality. New York: Oxford University Press. 248 pp. Cloth $49.95, paperback $24.95.

Cinque, Guglielmo. 1996. Italian syntax and universal grammar. New York: Cambridge University Press. 332 pp. Hardback $64.95.

Connor, Ulla. 1996. Contrastive Rhetoric: Cross-cultural aspects of second-language writing. New York: Cambridge University Press. 216 pp. Hardback $44.95, paperback $17.95..

Freeman, Donald and Jack C. Richards, eds. 1996. Teacher learning in language teaching. New York: Cambridge University Press. 398 pp. Hardback $44.95, paper $21.95.

Geis, Michael L. Speech acts and conversational interaction. 1995. New York: Cambridge University Press. 248 pp. Hardback $54.95.

Henry, Alison. Belfast English and standard English: Dialect variation and parameter setting (Oxford studies in comparative syntax). 1995. 148 pp. Cloth $49.95

Holmberg, Anders, and Christer Platzack. 1995. The role of inflection in Scandinavian syntax. New York: Oxford University Press. 253 pp. Cloth $39.95, paper $22.00.

Kimball, Geoffrey D. 1991. Koasati Grammar. Studies in the anthropology of North American Indians. Lincoln, NE: University of Nebraska Press. 639 pp. Cloth $70.00

Lynch, Brian K. 1995. Language program evaluation: Theory practice. New York: Cambridge University Press. 308 pp. Hardback $47.95, paperback $18.95.

Lock, Graham. 1995. Functional English grammar: An introduction for second language teachers. New York: Cambridge University Press. 309 pp. Hardback $44.95, paper $17.95.

McKay, Sandra Lee & Nancy H. Hornberger, eds. 1995. Sociolinguistics and Language Teaching. New York: Cambridge University Press. 484 pp. Hardback $47.95, paperback $21.95.

Ngea, Chia Emmanuel, ed. 1996. Guide to readability in African languages. Linguistics Edition 09. München, Germany: LINCOM EUROPA. 150 pp. $42.85.

Peräkylä, Anssi. 1995. AIDS counselling: Institutional interaction and clinical practice. New York: Cambridge University Press. 380 pp. Hardback $59.95.

Plank, Frans, ed. 1995. Double case: Agreement by suffixaufnahme. New York: Oxford University Press. 500 pp. $75.00.

Sampson, Geoffrey. 1995. English for the computer: The SUSANNE corpus and analytic scheme. New York: Clarendon Press, Oxford. 499 pp. Cloth $90.00.

Schütze, Carson T. 1996. The empirical base of linguistics: Grammaticality judgments and linguistic methodology. Chicago: University of Chicago Press. 253 pp. Cloth $28.95.

Senft, Gunter. 1996. Classificatory particles in Kilivila. Oxford studies in anthropological linguistics. New York: Oxford University Press. 394 pp. Cloth $75.00.

Turner, Mark. 1996. The literary mind. New York: Oxford U. Press. 187 pp. Cloth $25.00.

Unger, J. Marshall. 1996. Literacy and script reform in occupation Japan. Reading between the lines. New York: Oxford University Press. 176 pp. Cloth $39.95.

Vikner, Sten. 1995. Verb movement and expletive subjects in the Germanic languages. New York: Oxford University Press. 294 pp. Cloth $65.00; paper $35.00.

Working papers in Linguistics 8. 1996. London: University College. 623 pp. ■

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From the Linguistics Department

LinguaLinks

To date, more than 300 licenses for use of LinguaLinks and LinguaLinks Library have been issued. (LinguaLinks is software developed by SIL to aid the field linguist and translator to accomplish all aspects of a language program in an integrated fashion.) With growing usage there is also a growing interest in timely, accurate, detailed information about 'What will this do for me?', and about 'What will be added to the product, and when?'

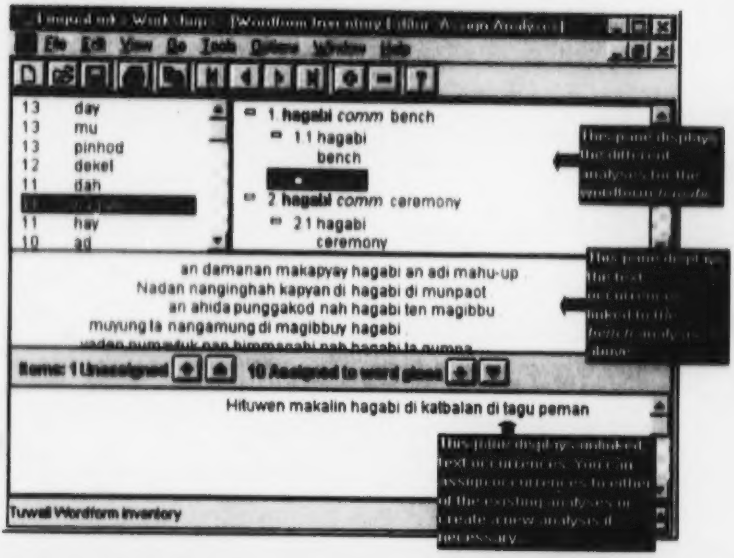
In future issues *Notes on Linguistics* will serve as a forum to address these questions for LinguaLinks applications in the domain of linguistics. Some of the articles addressing these issues will come from staff in the International Linguistics Department involved with LinguaLinks development. With this note, we would also like to solicit articles and reviews from *NOLg* readers who are LinguaLinks users, detailing their use of some of the linguistics applications in LinguaLinks.

In this issue we will begin by giving an overview of current LinguaLinks applications.

—David Payne, Editor

Linguistics applications in current LinguaLinks release

There are currently two major linguistic tools in LinguaLinks Workshops: the lexical database and the word analyzer (for text interlinearizing). The tools allow the user to analyze words, morphs, and parts of speech using more than one context and displaying previous analyses. The display of multiple contexts and helps the linguist determine the senses of a word or morph.


LinguaLinks Workshops - [Wordform Inventory Editor: Assign Analyses]
File Edit View Go Tools Options Window Help
Tuwali Wordform Inventory

13 day
13 mu
13 pinhod
12 dekel
11 dah
11 hay
10 ad

1. **hagabi** *comm* bench
1.1 hagabi
bench
2 **hagabi** *comm* ceremony
2.1 hagabi
ceremony

an damanan makapyay hagabi an adi mahu-up
Nadan nanginghah kapyan di hagabi di munpaot
an ahida punggakod nah hagabi ten magibbu
muyung la nangamung di magibbuy hagabi

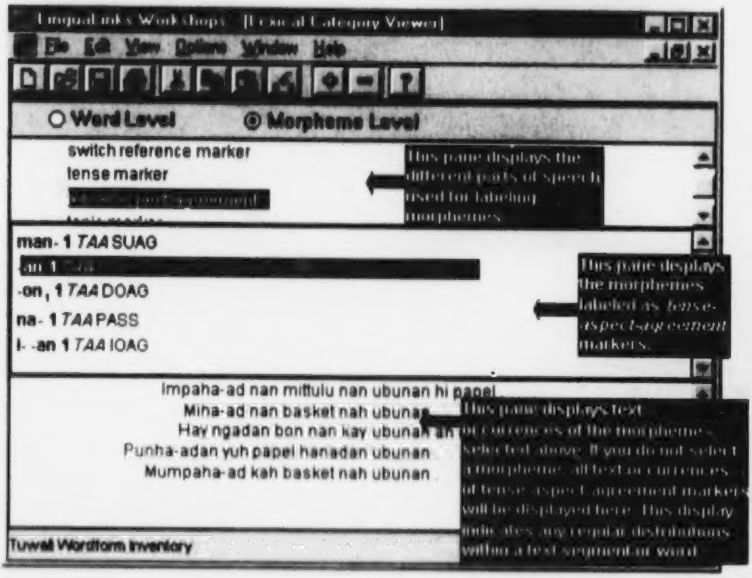
Items: 1 Unassigned **10 Assigned to word gloss**

Hituwen makalin hagabi di katbalan di tagu peman

This pane displays the different analyses for the wordform *hagabi*.

This pane displays the text occurrences linked to the *bench* analysis above.

This pane displays unlinked text occurrences. You can assign occurrences to either of the existing analyses or create a new analysis if necessary.


LinguaLinks Workshops - [Lexical Category Viewer]
File Edit View Options Window Help
Tuwali Wordform Inventory

○ **Word Level** ◉ **Morpheme Level**

switch reference marker
tense marker

man- 1 *TAA* SUAG
-on, 1 *TAA* DOAG
na- 1 *TAA* PASS
i- -an 1 *TAA* IOAG

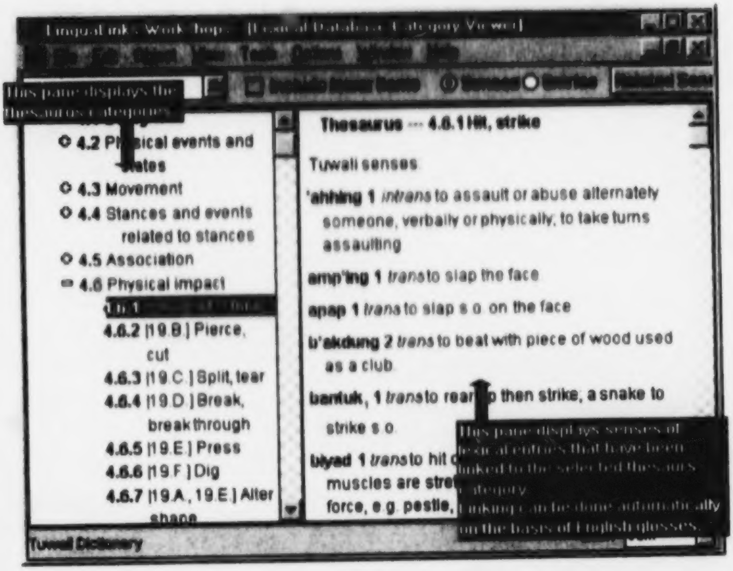
Impaha-ad nan mittulu nan ubunan hi papel
Miha-ad nan basket nah ubunan
Hay ngadan bon nan kay ubunan an
Punha-adan yuh papel hanadan ubunan
Mumpaha-ad kah basket nah ubunan

This pane displays the different parts of speech used for labeling morphemes.

This pane displays the morphemes labeled as *tense-aspect-agreement* markers.

This pane displays text occurrences of the morphemes selected above. If you do not select a morpheme, all text occurrences of tense-aspect-agreement markers will be displayed here. This display indicates any regular distributions within a text segment or word.

The lexical database tool allows the user to automatically link senses of lexical entries to a thesaurus. It does so on the basis of English glosses provided by the user. Entries can also be auto-linked to an anthropological classification scheme based on the Outline of Cultural Materials. This automatic categorization provides the linguist with a good first guess of semantically related items that can be further explored with a language assistant.



This pane displays the thesaurus categories.

- 4.2 Physical events and states
- 4.3 Movement
- 4.4 Stances and events related to stances
- 4.5 Association
- 4.6 Physical impact
  - 4.6.1
  - 4.6.2 [19.B.] Pierce, cut
  - 4.6.3 [19.C.] Split, tear
  - 4.6.4 [19.D.] Break, break through
  - 4.6.5 [19.E.] Press
  - 4.6.6 [19.F.] Dig
  - 4.6.7 [19.A., 19.E.] Alter shape

Thesaurus --- 4.6.1 Hit, strike

Tuwali senses

'ahhing 1 *intrans* to assault or abuse alternately someone, verbally or physically; to take turns assaulting

amp'ing 1 *trans* to slap the face

apap 1 *trans* to slap s.o. on the face

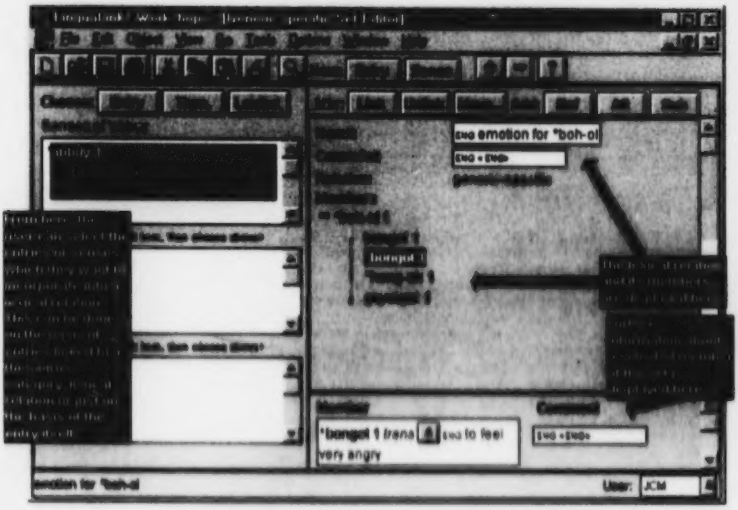
b'akdung 2 *trans* to beat with piece of wood used as a club

bantuk, 1 *trans* to rear up then strike; a snake to strike s.o.

bilyad 1 *trans* to hit
muscles are stre
force, e.g. pestle,

This pane displays senses of lexical entries that have been linked to the selected thesaurus category. Linking can be done automatically on the basis of English glosses.

The lexical database tool also allows the user to easily cross-reference entries. This is especially useful when examining lexical relations. The tool allows the user to create semantic sets of synonymous, ranking or hierarchical, antonomous, generic-specific, or whole-part relations. Existing entries can be added to a set. New entries can also be added directly from the lexical relations tool providing the linguist with the power and flexibility to thoroughly explore semantic paradigms.


swa emotion for *boh-ol
bongot 1
Number
Comment
*bongot 1 trans swa to feel very angry
User:
JCM

There is also a prototype phonology tool that allows the user to enter phonetically transcribed data and view all the contexts of specific phones.

We are endeavouring to create new tools and welcome feedback. More information on LinguaLinks Workshops and LinguaLinks Library is available from:

INFO_Lingualinks@sil.org

http://www.sil.org/lingualinks

LinguaLinks c/o SIL, 7500 W. Camp Wisdom Rd., Dallas, TX 75236.

—Larry Hayashi, LinguaLinks Field Manual Developer
International Linguistics Department

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Introduction to Government and Binding theory: Semantic roles and case theory

Cheryl A. Black
SIL—Mexico Branch and University of North Dakota

In the last article in this series (February 1997), we began looking at the constraints on movement. We saw there instances of head movement, such as movement of the auxiliary verb in front of the subject in a question, and Ā-movement, where a phrase moves to a non-argument position as in the fronting of a *wh*-phrase in content questions. This article looks at the third type of movement, A-movement or movement to the subject position, which is an argument position. Cases of A-movement to be considered here include passive, unaccusative, and raising constructions.

Passives are the most well-known constructions involving movement to the subject position. The old Transformational Grammar analysis begins with a transitive deep structure, then creates a passive surface structure by moving the subject to the *by*-phrase (or omitting it completely); moving the object to the subject position; adding the passive *be*; and changing the verb form appropriately. This movement analysis of passives captured the generalizations that:

(1) a. Most transitive verbs have passive alternants.
  b. No intransitive verbs have passive alternants.
  c. The 'subject' of a passive verb corresponds to the object of its transitive alternant.

Government and Binding Theory (Chomsky 1981, 1982, 1986), does not account for passives in exactly the same way as Transformational Grammar did, since movement of the object to a previously occupied subject position would violate the Principle of No Loss of Information. Besides accounting for the generalizations in (1), GB also seeks to explain the synonymy between the active and passive sentences, as seen in (2).

(2) a. The kids invited Sue to the party.
  b. Sue was invited to the party by the kids.

This is done by expanding the lexical entries to include semantic roles.

1. Semantic Roles in the Lexicon. In both (2a and b) *the kids* gave the invitation, *Sue* was the one invited, and *the party* is what Sue was invited to. General semantic roles, such as AGENT, THEME, RECIPIENT, GOAL, LOCATIVE, etc., can be linked to arguments within the lexical entries to capture this synonymy. For example, the lexical entry for *invite* would be:[1]

invite, V, [_ NP (PP[to])]
| |
invite′ <AGT, THEME, GOAL>

where each syntactic complement (called internal arguments) must be linked one-to-one with a semantic role, and one additional role may be linked to the external argument (or subject). Lexical entries apply at D-structure, so not all verbs assign a semantic role to the subject position.[2]

Further assumptions about lexical entries in GB include the desire that the related forms of a word share a single subcategorization frame and that there should not be any cross linking of syntactic arguments and semantic roles. For example—directly relevant to the analysis of Passive—the THEME should not be assigned to the object in one case and to the subject in a related entry. This assumption is formalized under the Uniformity of Theta Assignment Hypothesis (Baker 1988:46), which makes the broader claim that the THEME role is always assigned to the direct object when it is present, since that is its position in normal transitive verbs; the RECIPIENT role is assigned to the indirect object, etc.

Though the semantic roles are assigned at D-structure through the lexical entries, another assumption forbids any movement from changing the linking between syntactic arguments and semantic roles. Therefore, movement of something out of a position is allowed, as we have seen with

---

[1] The line containing the semantic roles is introduced by the logical semantic predicate which is indicated by the syntactic verb form followed by a prime. The lexical entry thus specifies both syntactic and semantic subcategorization information.

[2] For example, auxiliaries do not. So in *John may have hit a home run*, there is only one external argument = *John*. Which verb assigns a semantic role to *John*? It is the AGENT of the verb *hit*; *a home run* is the THEME of *hit*. Auxiliaries do not assign external arguments: there is nothing anyone did or experienced to *may*. Instead they simply select a VP complement that is a type of EVENT or STATE.

wh-question formation, but nothing else can move into that position. The semantic role stays with the original position rather than moving with the phrase; the semantic role is not part of the tree but part of the lexical subcategorization that goes with the D-structure position. Movement into a position linked to a semantic role is not allowed, since it would cause the moved element to take on that semantic role, and thus alter the original linking. The coindexed trace left after movement provides the link between the moved element and the position it occupied at D-structure. Therefore, both semantic role and subcategorization requirements are still recoverable at S-structure.

The assumptions about the form of the lexical entries are made to capture generalizations about language. Given these assumptions, the GB account of passive must be partly done in the lexicon and partly by movement. A lexical rule,[3] such as that given in (3), is used to capture generalizations (1a-b) that passive verbs are related to transitive verbs. No intransitive verbs will have a passive counterpart generated by this lexical rule. In order to account for alignment of the semantic roles between entries as much as possible and follow the Uniformity of Theta Assignment Hypothesis, the object NP remains in position at D-structure.

(3) V, [_ NP X] → V-en$_{[+pass]}$, [_ NP X (PP$_{[by]}$)]

The full lexical entry for the passive form *invited*, including semantic roles, is:

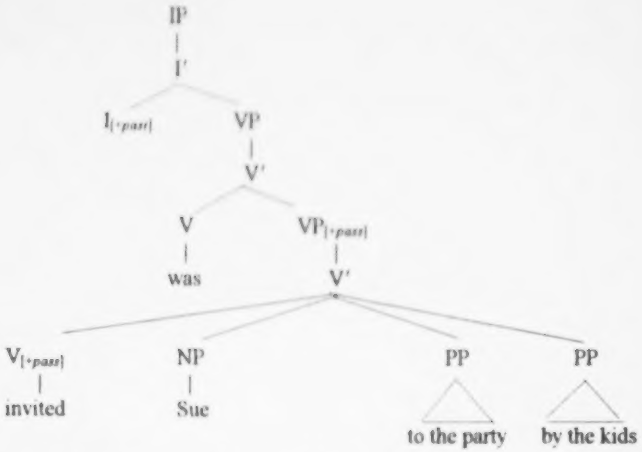
```
invited      V[+pass]      [ _NP    (PP[to] )  (PP[by] ) ]
                              |        |          |
invited'                   <THEME, GOAL, AGENT>
```

Note that no external argument is assigned by the passive verb. The D-structure for the passive sentence is as shown in (4), where the passive auxiliary verb is inserted from the lexicon as the only head which subcategorizes for a VP$_{[+pass]}$:

---

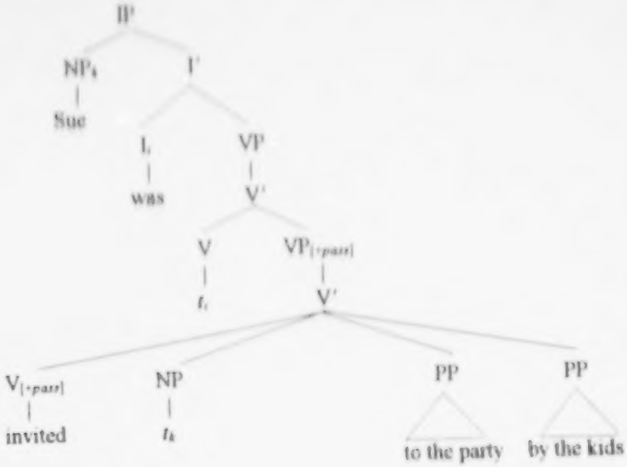
[3] A lexical rule takes a lexical entry that matches its left side and generates an additional lexical entry in the form of the right side. The original lexical entry is unchanged and still part of the lexicon. A few exceptional passives will have to be separately added to the lexicon, such as verbs which take clausal complements that can have a passive alternant.

(4) D-structure for passive


IP
I'
I[+past]
VP
V'
V
was
VP[+pass]
V'
V[+pass]
invited
NP
Sue
PP
to the party
PP
by the kids

Movement of the object to subject position is still needed. This movement can take place since there is no semantic role linked to the subject position at D-structure and the position was not lexically filled so the Principle of No Loss of Information is not violated. A coindexed trace is left behind to maintain the linking of the object to its semantic role. So S-structure looks like (5):

(5) S-structure for passive



The assumptions made about semantic roles in the lexical entries also requires us to distinguish between types of intransitive verbs, following the Unaccusative Hypothesis (Perlmutter 1978). The key distinction is whether the NP (which ends up) in subject position performed the action or was acted upon. Consider the examples in (6):

(6) a. Bill sleeps well.
b. Bill died.
c. The glass broke.
d. Bill broke the glass.

In (6a), *sleep* is assumed to be a regular intransitive verb with an AGENT subject. In contrast, Bill did not do anything to make himself die, so in (6b) the subject is assumed to have the THEME role. Similarly, in both (6c) and (6d) *the glass* is what the breaking happened to so it fills the THEME role in both the unaccusative construction in (6c) and the transitive construction in (6d).

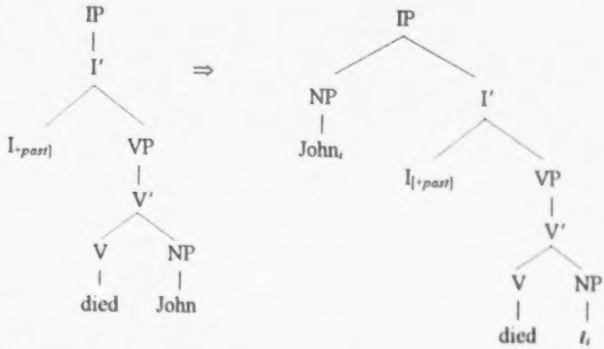
The assumptions about semantic roles require that while verbs like *sleep* have an AGENT in subject position at D-structure, verbs like *die* have an empty subject position at D-structure with a THEME object, as shown in the lexical entries below.

Further, a verb like *break* has an optional AGENT. Movement of the THEME to subject position for the unaccusative verb *die* is exactly parallel to the passive movement, as shown in the simple example in (7).

sleep, V [_] die, V [_ NP] break, V [_ NP]

sleep′ <AGT> die′ <THEME> break′ <(AGT), THEME>

(7) D-structure S-structure

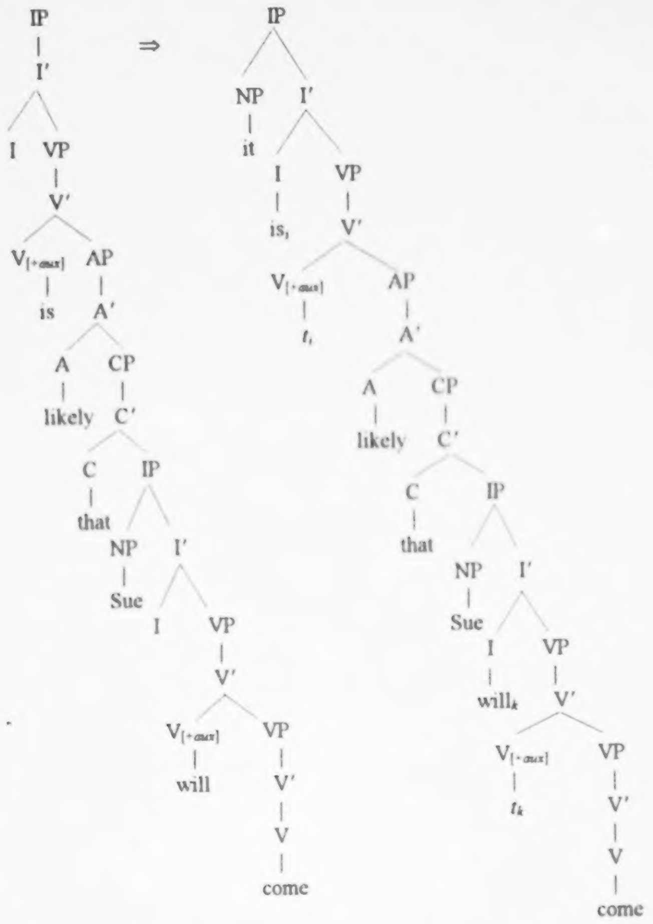


The third type of A-movement (movement to an argument position) involves raising predicates such as *seem* and *likely*. These predicates take either a finite or a nonfinite clause complement and do not assign a semantic role to their own subject position. The lack of a semantic role assigned to the subject position can be seen by the presence of the dummy *it* when there is a finite clause complement (8a). In the case of a nonfinite clause complement, the subject of the lower clause must raise to the main clause subject position (8b-c).

(8) a. It is likely that Sue will come.
b. Sue is likely to come.
c. *It is likely Sue to come.

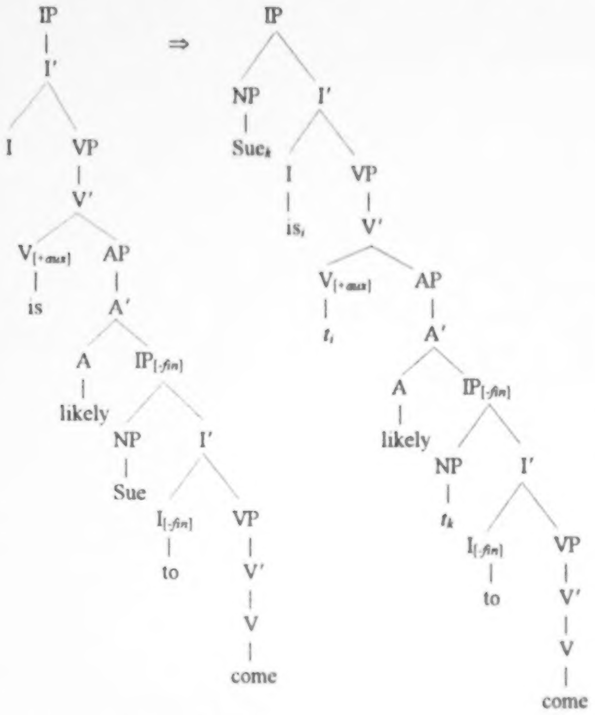
The trees for (8a) are given in (9). The dummy *it* is inserted in the main clause subject position to obtain the S-structure, fulfilling the English-specific requirement that (at least) main clauses have phonetically filled subjects. Movement of the auxiliaries to I^0 in both clauses is also shown.

(9) D-structure S-structure


IP
I'
I
VP
V'
$V_{[+aux]}$
AP
is
A'
A
CP
likely
C'
C
IP
that
NP
I'
Sue
I
VP
V'
$V_{[+aux]}$
VP
will
V'
V
come
⇒
IP
NP
I'
it
I
VP
is_i
V'
$V_{[+aux]}$
AP
t_i
A'
A
CP
likely
C'
C
IP
that
NP
I'
Sue
I
VP
$will_k$
V'
$V_{[+aux]}$
VP
t_k
V'
V
come

Contrast the tree in (9) for (8a) with (8b), where the subject of the nonfinite clause must raise to the main clause subject position, as shown in (10).

(10) D-structure S-structure


IP
I′
I
VP
V′
V[+aux]
is
AP
A′
A
likely
IP[-fin]
NP
Sue
I′
I[-fin]
to
VP
V′
V
come
⇒
IP
NP
Sue_k
I′
I
is_i
VP
V′
V[+aux]
t_i
AP
A′
A
likely
IP[-fin]
NP
t_k
I′
I[-fin]
to
VP
V′
V
come

Clearly, more than just a requirement that the main clause subject position be phonetically filled is at work here. Case Theory provides the motivation for A-movement of the particular NP in passives, unaccusatives, and raising constructions.

2. Case Theory. The English pronoun system gives us a glimpse of the positions that are assigned case and which morphological case they receive. Consider the data in (11)-(17).

(11) **She/*her** went to the store.
(12) John invited **her/*she** to the party.
(13) John bought it for **her/*she**.
(14) John would have liked for **her/*she** to come.
(15) John was glad that **she/*her** came.

(16) John wondered whether **she/*her** would come.

(17) **She/*her** brought **them/*they their/*they/*them** suitcases.

We can generalize from this data that:

a. *she, they, I*, etc. are used in subject position of main and embedded clauses, except for embedded clauses headed by $C_{[for]}$.

b. *her, them, me*, etc. are used in object position and as the object of a preposition and in subject position after $C_{[for]}$.

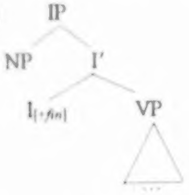
c. *their, his, my*, etc. are used in possessor position.

As usual, GB rephrases the generalizations in terms of phrase structure. Also, even though only pronouns show overt morphological case in English, it is assumed that all NPs have Case (called abstract case) that matches the morphological case that shows up on pronouns. Appeal is made to other languages with much richer case systems than English to back up this claim.

In phrase structure terms:

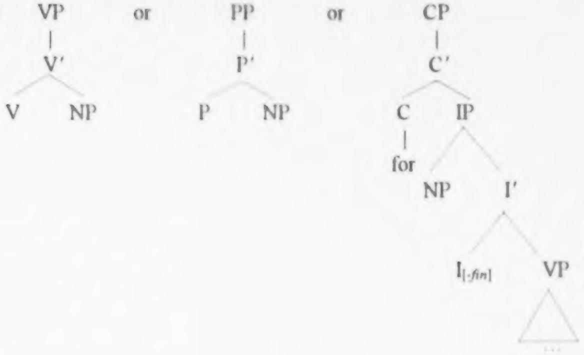
a. Nominative Case is assigned to the NP specifier of $I_{[+fin]}$.

(18)



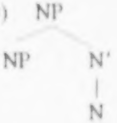
b. Accusative case is assigned to the NP sister of V or P. The $C_{[for]}$ which is homophonous with the preposition *for* acts like P for Case assignment. Note that the subject of a nonfinite clause could not receive Case from $I_{[-fin]}$ since only $I_{[+fin]}$ assigns Nominative Case.

(19)



c. Genitive Case is assigned to the specifier of N.

(20)



What is the same about these positions that receive Case and the positions that assign Case? Chomsky observed that every maximal projection (=XP) that dominates the NP that receives Case also dominates the head that assigns it (if we do not count the IP that intervenes between the $C_{[for]}$ and the NP).

Our first definition of **government**[4] comes from this observation.

α GOVERNS β iff

a. α is a head [±N,±V] or $I_{[+fin]}$ or $C_{[for]}$, and
b. every XP that dominates α also dominates β, and
c. every XP (other than IP) that dominates β also dominates α.

In this definition, α and β stand for particular categories. Clause (a) requires that α be one of the heads N, V, A, P, $I_{[+fin]}$ or $C_{[for]}$. Almost always, β is an NP, since NPs need Case, which is assigned under the government relation. Clause (b) determines how high up the tree a head may govern: if every maximal projection above the head must also dominate the NP in question, then the NP must be below the maximal projection of the head (e.g. VP for V, IP for $\mathrm{I}_{[+fin]}$). Clause (c) provides the lower limit of government by not allowing the head to govern down into another maximal projection other than IP. Together, clauses (b) and (c) establish locality constraints on the government relation for each head.

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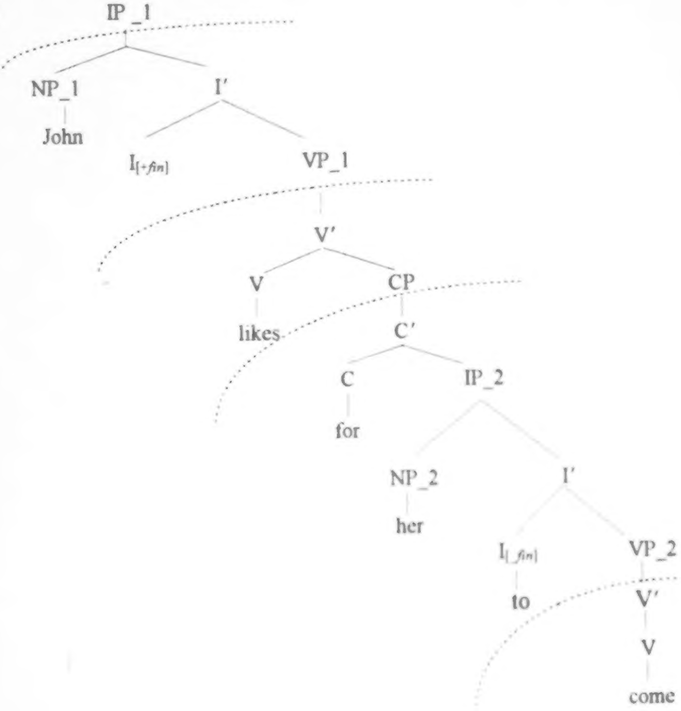
[4] This definition will be changed slightly in Article 6 on Binding Theory. At that point, the reader should be able to understand the full name of the theory.

These locality constraints are illustrated in the tree in (20) by the dashed lines. (Indexes have been added to some of the caegories to aid discussion.)

(21)



There are four heads that can govern in this tree: $\mathrm{I}_{[+fin]}$, V *likes*, C *for*, and V *come* (recall that $\mathrm{I}_{[-fin]}$ *to* cannot govern by clause (a) of the definition). $\mathrm{I}_{[+fin]}$, governs up to its maximal projection IP_1, so it governs its specifier NP_1 *John*, and $\mathrm{I}_{[+fin]}$ also governs its complement VP_1 (but not anything inside VP_1). V *likes* governs up to its maximal projection VP_1 and its complement CP, but it does not govern anything within the CP. C *for* governs up to its CP maximal projection and down all the way through IP_2 (which is invisible for government) to and including the next maximal projection VP_2, crucially governing the NP_2 *her*. Finally, V *come* governs everything else within its own maximal projeciton, which in this case is nothing.

Since we will be using govenment for Case assignment to NPs, we can think of the definition in simpler terms as:

> A head (N, V, A, P, $I_{[+fin]}$, $C_{[for]}$, GOVERNS its NP specifier and its NP complement and the NP specifier of an $IP_{[-fin]}$ complement.

Note that government is stronger than subcategorization because a head governs its specifier (and the specifier of its complement for IP complements) as well as its complements.

The Case assignment rules in terms of government are simply:

a. $I_{[+fin]}$ assigns nominative case to the NP specifier that it governs.
b. N assigns genitive case to the NP specifier that it governs.
c. V, P, $C_{[for]}$ assign accusative case to the NP that they govern.

GB requires that all NPs must have Case at S-structure by the Case Filter in (22).

(22) Case Filter: *NP if it does not have Case at S-structure.

With one further assumption, we will have the motivation for A-movement in passive, unaccusative, and raising constructions. Burzio's Generalization (Burzio 1986) states that predicates that do not assign a semantic role to their external argument cannot assign Case to their complement(s). This provides the answer to why the passive object must move. Passive verbs do not assign a semantic role to their external argument position, so they have lost the ability to assign Case to their complement. Therefore, the NP object cannot remain in place at S-structure and must move to a position where it can get Case: the specifier of $I_{[+fin]}$ where nominative case is assigned. The same reasoning accounts for the unaccusative and raising constructions: the NP which cannot receive Case in its D-structure position is the one which must move; and it may only move to a position which does assign Case, the specifier of $I_{[+fin]}$.

Note that A-movement is motivated by the need for Case, so the moved NP will be in a Case-assigning position at S-structure but its trace will not. Ā-movement is just the opposite: the moved NP is not in a Case-assigning position at S-structure but its trace is. We must therefore allow the Ā-moved phrase to pass the Case Filter via its coindexed trace. In general, either the moved NP or its trace must be assigned Case at S-structure, but not both. Another way of stating this is to say that the moved element and its coindexed trace form a **chain**, and only one Case is assigned to a chain.[5]

We have now completed the basic restrictions on the three types of movement allowed in GB. We also learned what government is in phrase structure terms. The next article moves to the second part of the name of the theory: binding constructions.

REFERENCES

Baker, Mark C. 1988. Incorporation: A theory of grammatical function changing. Chicago: University of Chicago Press.

Burzio, Luigi. 1986. Italian syntax: A Government-Binding approach. Studies in natural language and linguistic theory. Dordrecht: Kluwer.

Chomsky, Noam. 1981. Lectures on Government and Binding. Dordrecht: Foris.

_________. 1982. Some concepts and consequences of the theory of Government and Binding. Chicago: MIT Press.

_________. 1986. Barriers. Chicago: MIT Press.

Perlmutter, David. 1978. Impersonal passives and the unaccusative hypothesis. In. Proceedings of the Fourth Annual Meeting of the Berkeley Linguistics Society, J. Jaeger et al., eds. Berkeley: University of California.

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[5] The only construction which seems to allow two Case assignments to a chain is *tough* movement, where the object NP of an embedded nonfinite clause may move to the main clause subject position:

(21) a. The bricks$_i$ are hard for Lisa to cut t_i.
b. The bricks$_i$ are hard to cut t_i

The bricks would receive nominative Case in its S-structure subject position, but its trace would also receive accusative Case from *cut*. This construction remains a problem for the theory.

Review Article

University College London working papers in linguistics (UCLWPL).
Department of Phonetics and Linguistics, University College London.
Vol. 2 by JOHN HARRIS, ed. 1990. 375 pp.
Vol. 4 by HANS VAN DE KOOT, ed. 1992. 428 pp.
Vol. 5 by JOHN HARRIS, ed. 1993. 457 pp.
Vol. 6 by JOHN HARRIS, ed. 1994. 552 pp.

Reviewed by CARL FOLLINGSTAD
SIL—Nigeria Group

UCLWPL Vol. 2

This is the second volume of the UCLWPL to be reviewed in *Notes on Linguistics* (see John Clifton, NOLG 68:43-46). It contains research reports from staff and post graduate students in the Linguistics section of the Department of Phonetics and Linguistics, University College London. Two of Clifton's comments on the first volume are worth repeating here:

1. Useful background for these articles can be found in Wilson and Sperber 1987 (NOLG 39:5-24).
2. It is the Relevance Theory (henceforth RT) articles which are in general the most useful for field linguists (even though nearly all of them concentrate on Indo-European languages), and so this review article will primarily concentrate on them (NOLG 68:43).

The volume is divided into Relevance Theory (RT) (7 articles), Government and Binding (GB) Syntax (5), and General (6).

Clark and Lindsey examine the so-called 'exclamatory-inversion' construction (e.g., 'Boy, is syntax easy!') (32). The Yes/No question communicates that either a positive or negative answer would be relevant. The 'exclamatory inversion' construction communicates that the speaker has the answer in mind and considers it relevant (40). There are extra contextual effects given by the use of the construction—it communicates that whatever is predicated is beyond expectation in some way; otherwise the simple declarative form would be used (40). Whether or not non-Indo-European languages have a construction with this function, and, if so, how it is linguistically marked, remains an interesting empirical question *Notes on Linguistics* readers might address.

Areas of functional tension between suprasegmentals and aspects of linguistic structure are interesting in themselves. This volume has a discussion of how the presence of particles can override considerations of intonation in interpreting even a declarative construction as an interrogative (1990:48-49). The interplay between intonation and particles has of course been relevant to other areas of grammar besides interrogatives and exclamatory inversions. Other areas include scope of negation (Follingstad 1991:117-119) and interpretation of causal conjunctions (Vandepitte 1993:163-170).

'Linguistic form and relevance' by Wilson and Sperber represents a complement to Sperber and Wilson (1986) which presented a theory of utterance interpretation consisting of two phases: a decoding phase and an inferential phase. Relevance (1986) deals with the latter, and their present article deals in more detail with the former (95). They seek to describe in general the types of information which linguistic utterances can convey in order to differentiate between the inferential and decoding phases in a principled way.

Reiko Itani-Kaufmann in 'Explicature and explicit attitude' accounts for the pragmatic function of attitudinal phrases such as *suppose* and *probably* in terms of RT. It is argued that *suppose* is part of the proposition in which it occurs but that it can either fall inside (e.g., if focused) or outside of the part of the proposition that is relevant. Other attitudinal words such as *probably* and *certainly* are considered to be 'parenthetical' and as such lie outside the scope of the proposition with which it occurs as a 'high level explicature' (60-63). Again the questions arises as to whether this type of description, which seems to especially suit the speech act distinctions in English, could be applied to other languages that differ in their linguistic marking of 'attitudinal' expressions (and with respect to evidentiality in general).

There are two RT articles on tense/aspect in this volume, both of which are important with respect to the meaning distinctions indicated by different tense-aspect forms. N. Smith, in 'Observations on the pragmatics of tense' addresses such issues as the ambiguous past tense, the so-called narrative past, and the dynamicity of present tense (historical present) uses of the verb (82). His approach is to put less 'meaning' into the tense system and treat it more like a deictic (e.g., a demonstrative pronoun, which has minimal inherent meaning), leaving the meaning/interpretation to be filled in by the principle of relevance (83-84). For example, narrative past verbs sometimes fail to 'move the discourse forward'. This is handled by regarding the temporal ordering as part of the process of inference of the events rather than arising from the inherent tense meaning of the verbs themselves. Such an approach seems to have some promise and is consistent with an important claim of RT that the linguistic code is under-determined and so must be enriched by inference in a context (but see concluding paragraph below).

Finally, Smith employs of the RT notion of 'interpretive use' to explain certain marked instances of the present (habitual). 'Interpretive use' in RT refers to the situation in which a proposition represents another representation due to some resemblance with another propositional form (e.g. indirect speech, summaries, etc.). This contrasts with 'descriptive use' in which a proposition represents some state of affairs because its propositional form is true (literal) of some state of affairs (83/SW 1986:228-29). This theoretical distinction allows Smith to describe the descriptive (unmarked) use of the present habitual as well as account for some of its 'marked' (i.e. 'interpretive') uses. Thus, the present habitual can be used in summaries ('This is a story in which Mary climbs the Matterhorn') or headlines/titles ('Mary climbs the Matterhorn!'). Other examples include the present habitual in jokes, stage directions, reports, 'futurates' (i.e., 'The train leaves at seven') (91-92). The 'historic present' is described in terms of its overall function of heightening relevance by representing past as present. It is 'interpretively used' in the sense that it 'conjures up' a representation of the image of the scene described. However, he does admit that interpretive use cannot explain all instances of the historic present (e.g. performatives) (93).

Smith makes an significant comment with respect to genre. He notes:

> It is clear that linguistically there is no justification for making either distinction [i.e. between narrative and non-narrative genres]. That is, the same pragmatic principles apply in all tenses and to all genres: it is not only in narrative discourse that time moves forward; it does so in conversation, in hypothesis formation, in deduction, and almost everywhere else. (89)

This view provides a contrast to Longacre's genre paradigm where +/- contingent (chronological) succession is a parameter that divides narrative and procedural from behavioral and expository genres (1983:5).

Zegarac ('Pragmatics and verbal aspect') rejects the analysis of aspect in Serbo-Croat in terms of traditional imperfective-perfective opposition and Vendlerian situation types (1967), (i.e. states, processes, accomplishments, activities) both of which are too dependent on the notion of time. Instead, he favors an approach to the situation types which focuses on the 'representation of change' as foundational to the sorts of distinctions the types purport to represent (142). Another problem he addresses is the lack of correlation between the actual linguistic behavior of the imperfective/perfective and the theoretical predictions of the situation type model (113-114, 117). He deals with this problem by moving the 'semantics' of verbs into the RT 'logical entry' category (i.e. the logical schematic form that must be enriched by inference/context). He then considers how the verbs constrain interpretation, rather than focus on how they are classified by situation type (142). In another section he describes how the English present progressive (vs. the simple present) is a 'constraint on explicit content' (138-141). The progressive constrains the meaning of the predicate by indicating that there is some tangible event in the real world to which it refers (125,139). For example, in the sentence 'The new model is running on unleaded petrol', the use of the progressive requires that there be some referent here—that there should be some sample of the new model (125).

RT articles on the function of discourse connectives are typically relevant to field work. In 'But: Contradiction and relevance', V. Rouchota investigates the use of *but* as a 'semantic constraint on relevance' (Blakemore 1987, 1989). That is, *but* not only causes a difference in meaning that is 'semantic', but also constrains or guides the way propositions joined by *but* are processed according to 'relevance' considerations (67). He discusses the 'denial of expectation' use of *but* in which *but* fulfills the pragmatic function of contradicting or denying the assumption implied by the first conjunct of the unit (68). In the 'contrast' use, *but* serves the pragmatic function of instructing 'the hearer to derive the negation' of the first conjunct (70).

The modern Greek conjunction *para* adds another pragmatic function to this list of conjunctions specifying the inferential relation of contradiction. *Para* achieves relevance by correcting or replacing the assumption of the first conjunct. Whereas the 'denial' use of *but* involves the creation of an expectation in the first conjunct, and (pragmatically guided by *but*), the subsequent denial or elimination of that assumption, the 'correction' use involves an elimination of an assumption (through means of a negative). The Greek *para* then serves to strengthen the elimination of that assumption rather than eliminate it itself (i.e., it confirms the negation of the first conjunct). One wonders what other variations on the *but* constraint exist in other languages (see Spreda 1994 for an example of different sorts of *and* (i.e., *parallel*) constraints in an African language). Rouchota's analysis of *para* is new with respect to RT, but the phenomenon he is describing has been analyzed in the Functional Grammar model as 'replacement focus' (De Jong 1980; Dik 1980). It would have been useful for Rouchota to reference work on focus as presented in the functional approaches to grammar with respect to his analysis of *para*.

It is satisfying to see that the cognitive-theoretical model of RT continues to be applied to different areas of linguistic structure. This serves to both support its theoretical claims, and to benefit the field linguist, as the cognitive-pragmatic bent of RT often gives communication-oriented results which can be of good use to the field linguist and translator. On the other hand, the approach which removes more meaning from the linguistic code with corresponding reliance on inference and context for enrichment (cf. discussion of tense/aspect above) might be correct, but adequate controls on the linguistic description of pragmatic contexts would seem difficult to find and formalize (though Wilson and Sperber's article is a definite step in this direction). This description/verification concern could be considered by some as a weakness of this more MINIMAL approach to semantics. However, RT articles like those found in this volume do help address this concern.

UCLWPL Vol. 4

Three of the RT articles in this volume deal with participant reference—two of them specifically with the well-known problem of how to infer the identity of a referent when there is more than one possibility in the context and the anaphor (e.g., pronoun) is referentially ambiguous. Wilson in 'Reference and relevance' defines the problem of 'bridging reference' in RT terms as 'the retrieval or construction of a contextual assumption including a candidate referent which is then used to assessing reference to a subsequent definite NP' (168). Rejecting selection criteria based on 'salience' and 'shortest path assumption', she argues that RT is the only theory that adequately handles the problem of referent selection. This is due in part to the fact that RT, and not the other proposals, give an explanation of how to select the right CONTEXT in which to process reference assignment, as this is vital to the identification of the intended referent.

Matsui ('Bridging reference and the notions of *topic* and *focus*') treats two other criteria proposed for the identification of ambiguous referents. The author rejects both the idea that the referent can be established based on whether it is the 'topic-of-the-discourse', and whether it is the 'expected focus' (i.e., 'the element which is talked about' (246). Though both of the criteria are similar in nature, they are backed by different interpretation procedures. Wilson's concept of the 'bridging assumption' is investigated in more detail—that is, the important 'bridging implicature' or 'new contextual assumption' which is needed to bridge the gap between the ambiguous referent and the previous utterance. This involves extending the context by means of the combination of assumptions already extant in the context with the 'encyclopedic knowledge' entry which each referent has. This is done in accordance with the processing-cost versus effect-benefit principles of RT to identify the referent. Though the RT model explicates the process of interpretation of the ambiguous referents in more detail than the other proposals, it is not clear how the encyclopedic entry of RT qualitatively differs from the focus model's proposed criterion of selection, viz. that the interpretation of the identify of the referent must be in accordance with the hearer's general knowledge. (249)

V. Rouchota ('On indefinite and definite descriptions') discusses the differences between indefinite and definite descriptions as well as certain unusual uses of indefinite ones. For example, the author discusses sentences which have the same propositional content, but differ in whether the main referent is indefinite or definite, (but when the referent is 'known' in both):

a. A convicted embezzler is flirting with your sister (286)
b. The convicted embezzler is flirting with your sister (290)

Assuming the identity of the referent is known, what is the difference between (a) and (b)? Rouchota maintains that the sentences have a different impact and this is due to the core nature of definite (familiar) and indefinite (novel, new) reference. Both (a) and (b) have the same propositional content ('X is flirting with your sister'), but (a) is unusual and therefore costs more to process because it is atypical to use indefinite reference for something that is known. RT states that extra processing effort must be rewarded by extra contextual effects and so (a) has extra nuances of humor, irony, etc. which the more directly referential (definite) (b) lacks.

PLPs ('Pesky little particles') are a bane to everyone and it is always salutary to see linguists struggle to adequately describe them. There are two articles on particles in this volume. Reiko Itani, in 'Japanese sentence-final particle *ne*-, rejects the interpretation of *ne*- as a marker of illocutionary force, a polite 'hedge' or illocutionary politeness marker, a lexical speech act type, or as an intonational tag. Instead, using RT the author proposes that '*ne* encodes ... the speaker's desire to establish common ground ...'

(236). This definition seems to capture some of the specific uses of the particle, but perhaps does so at some cost, as the definition is so general it could be applied to many other types of linguistic utterances.

The author investigates the social implications or rhetorical/extended contextual effects and RT is felt to better capture the semantic conceptual core as well as the extended social uses (pragmatic effects). The cyclical process of identifying a core meaning/function of a particle, tracing its use, and distilling extended meanings in other contexts is often a struggle. This is at least due in part because particles, like lexical items, blend to the contexts in which they occur. Thus, Itani's type of particle tracing can be very illustrative for one's own analysis of the PLPs one faces. Floyd (1993) goes through a similar process of identifying extended uses/meanings of evidential particles in Wanka using Langacker's Cognitive Grammar model (1987, 1991).

Understanding linguistically (and especially translating) basic conjunctions like *and* and *but* are often problematic as well. Robyn Carston ('Conjunction, explanation, and relevance') attempts to describe *and* in a new way. The author rejects the 'semantically empty' view of *and* (i.e., the context will fill in its meaning by inference) due to the fact that *and* constrains the interpretation of two conjuncts in a way that asyndeton (lack of a conjunction) does not. Carston (158) proposes that *and* has a negative-constraint function—it indicates that the second of the two conjuncts it joins cannot be an explanation of the first. Consider the following (160):

(a) I ate somewhere nice last week; I ate at McDonald's
(b) I ate somewhere nice last week and I ate at McDonald's

The *and* in (b) rules out an 'explanation' interpretation which is allowed by asyndeton in (a). The author finds further support for this claim in that explanation-type conjunctions (e.g. *that is, after all*) do not embed comfortably with *and* (159). It seems that Carston's pragmatic approach has opened up new lines of investigation of the function of *and*, but whether such a negative definition completely covers its range of function remains to be seen. Moreover, the RT justification for the new solution seems a bit nonintuitive (160).

Illy Infantidou-Troiki ('Sentential adverbs and relevance') examines four classes of sentential adverbs: illocutionary (*frankly, honestly*), attitudinal (*sadly, unfortunately*), evidential (*obviously, clearly*), and hearsay (*allegedly, reportedly*) (193-95). Respectively, they modify an illocutionary verb, indicate a speaker's attitude to a statement, indicate the source or strength of the speaker's evidence, and indicate that the source of knowledge is not the speaker (193-95). The author rejects the current 'speech act' view of these adverbs as markers of illocutionary force and non-truth conditionals (i.e. not contributing to the truth content of the main proposition) (195-96). She applies various syntactic tests to determine the truth-conditional status of the adverbs and concludes that though some may not contribute to truth-conditions in the main proposition (i.e. the illocutionary and attitudinal ones), they are still truth-conditional on their own.

Also, the non-truth conditional adverbs differ in relevance considerations. In (a), for example, the non-truth conditional adverb does not achieve the 'main relevance' in the utterance—the main proposition does. But in (b) the truth-conditional hearsay adverb *allegedly* DOES contribute to the truth-conditional status of the main proposition and with the proposition achieves 'overall' relevance. That is, it is not only relevant that John left, but that it is ALLEGED that he did (213):

(a) Frankly, John left.
(b) Allegedly, John left.

The qualification of these types of constructions in terms of 'main' and 'overall' relevance implies that there are degrees of relevance and, moreover, that one part of a proposition is more relevant than another. However, this notion of 'degree of relevance' is applied at the level of the sub-proposition/main-proposition level, rather than between competing propositions which would be the case if the adverb and main utterance are considered separate utterances, as Infantidou Troiki does in a later article on parenthetical adverbs (see below).

UCLWPL Vol. 5

This volume of the workpapers includes seven articles on GB syntax, five articles on Relevance Theory, four articles on phonology, and one general article.

Dolores Garcia Gonzalez ('Grice, relevance, and speaker's meaning') analyzes Grice's (1969) notion of 'utterer's occasion meaning' in the absence of an audience which includes entries in diaries, rehearsing a part in a projected speech, silent thinking, writing notes to clarify a problem, soliloquies, leaving a note for a friend in case s/he stops by, self-mutterings, and public signs (165). She finds Grice's approach which depends on the recognition and fulfillment of the speaker's intentions (as well as others who describe 'intention' as the inducement of the hearer to accept a proposition as true), as too strong (180-81) and which thus runs into trouble accounting for such no-audience communication. Rather, RT maintains that communication can take place without fulfillment of intentions and that the hearer is not always induced to accept a proposition as true, but merely to have his cognitive environment modified in some way (181).

With RT's less demanding principles of communication in hand, as well as some other mechanisms of the theory, the author proceeds to explain the no-audience speech events. For example, rehearsing for a speech involves the RT concept of 'interpretive use' in which utterances can be used to resemble other ones—not literally in this case but with the same contextual implications. Thus the rehearsing of a speech with its concomitant summary changes and modifications is an 'interpretation' of the fully literal speech-in-detail-in-thought (189).

Elly Infantidou ('Parentheticals and relevance') examines parenthetical expressions (e.g., 'Your house is, I SUPPOSE, very old' [parenthetical] vs. 'I suppose that your house is very old' [main clause with complement]) (193). After applying various syntactic truth-conditional tests, she determines that parenthetical expressions do not contribute to the truth-content of the main proposition, though they are themselves conceptual (i.e. are truth-conditional). The fact that a proposition is qualified by a parenthetical expression adds processing effort and compensates for this by extra contextual effects. If a verb like *suppose/think* is used the effect would be to diminish commitment to the proposition expressed, whereas with the use of the verb *know* the effect would be the opposite (208). Infantidou sees a problem in analyzing parenthetical verbs in a different way than the same verb in the main proposition (even though the syntactic 'tests' have shown they behave differently). The problem is that they have the same propositional structure; that is, (a) (which is not parenthetical), (b), and (c) below all communicate the same thing (205-06):

(a) I think John is in Berlin.
(b) John is, I think, in Berlin.
(c) John is in Berlin, I think.

Infantidou proposes to solve the problem by treating the parenthetical and the main proposition in (b-c) as two different utterances, a hypothesis which the author feels is corroborated by other data which indicates the phonological, syntactical, and semantic independence of these constructions

(206). Then the propositions (b-c) would assert both the main proposition (typically the most deeply embedded assertion) and the parenthetical proposition. It would be a matter of having an 'intuition' as to which of the sub-parts achieved the main relevance (206). The problem, of course, is that now there are two separate utterances so there is no embedding or sub-utterance, thus the choice of relevance is between two independent utterances. There is no easy way of capturing this in RT at the moment whose highest theoretical level of utterance is the 'higher-level explicature'.

Another problematic issue in the analysis of the parentheticals has to do with their syntactic position. It seems that not enough attention is given to the significance of the syntactic position of the parenthetical. Positional changes typically indicate meaning or function differences. The position of the parenthetical in (b-c) above could be related to issues of focus or salience (a larger discourse context would be necessary to determine this, of course). If so, the position of the parenthetical is related to which item(s) in the proposition is marked as salient, though the propositional content is the same. The fact that the propositional structure of (a-c) above is identical would seem to support this type of same-proposition/different-focus approach. The author's syntactic tests which purportedly determine the different truth-conditional features of these parentheticals might have more to do with the syntactic ill-formedness of embedding focus constructions. In any case, this kind of argument should have been addressed in the paper. (These comments could also apply to Infantidou's other papers in volumes two and four of the workpapers.)

Villy Rouchota's ('Relevance theory and *na*-interrogatives in Modern Greek') represents another useful example of tracing the meaning or function of a particle in different contexts. The author regards the previous typological analyses of the *na* interrogative as useful, but amounting to a list of the possible interpretations the particle may have (251). Though some explicit criteria are given to expound the different question types in which *na* occurs (251), there is no theory to help decide which are more important for interpreting *na* in a context (252). In order to account for the very wide range of *na* interrogative data, he finds it necessary to pragmatically enrich both the semantics of the *na* clauses and the very 'semantics of interrogatives' itself (253). In all the examples below, the non-*na* interrogative can occur as well.

Na is semantically defined as a particle which 'encodes that the proposition expressed by the utterance represents a thought entertained as a description of a state of affairs in a possible world' (253). Thus (a) below is a real question:

(a) *na rotiso kati?*
na ask something? (253)
Can I ask something?

(b) *na rotisis kati*
na ask something
You may ask something (253)

However, (b) represents the issuing of permission to ask something, but with the *na* interrogative. Thus, the semantics of *na* as 'the world described is possible' is inferentially enriched into 'the world described is desirable and potential' (253-54). The other pragmatic enrichment necessary in (b) is the decision as to whom the answer is relevant (this turns out to be a very important parameter in tracing the uses of *na*). In (a), as in typical questions, the answer is assumed to be relevant to the speaker himself. In (b), however, the answer is regarded as relevant to the hearer and it is this fact that gives the 'subjunctive' feel to the interrogative. Rouchota notes that linguistically marked subjunctive questions (as opposed to indicative questions) are common in many languages (e.g. the Omotic languages of Ethiopia) (254).

The author also considers *na* vs. non-*na* rhetorical questions. He maintains that the semantic difference between *na* ('possible') and non-*na* ('actual') interrogatives result in slightly different, though important, shades of interpretation of rhetorical questions when they are pragmatically interpreted. In the two rhetorical questions (a-b) below, the speaker is repeating an assertion from the previous speaker (now hearer). The first rhetorical question in (a) is regarded as stronger, more emphatic, or more emotional by the Modern Greek native speaker (265) than the non *na* rhetorical question in (b).

(a) *Ego na se ksehasa kiria Anna?*
I *na* you forgot Mrs. Anna?
Would I forget you, Mrs Anna?

(b) *Ego se ksehasa kiria Anna?*
I you forgot Mrs Anna?
I forgot you, Mrs Anna?

He says that in (b) Peter uttering a non *na* clause chooses to attribute to the hearer the thought that 'It is actual that Peter forgot Mrs. Anna' and [sic] disassociate himself from it (265). In (a), however, Peter uttering a *na* clause chooses to attribute to Mrs Anna the thought that 'it is possible that Peter forgot Mrs. Anna' (265). Thus, the rhetorical question in (a) questions whether it could be possible that the speaker forgot Mrs Anna in ANY POSSIBLE world, whereas (b) questions whether he actually did so (only) in the real world and so (a) is stronger. (a) might be paraphrased, 'Is there any possible way I could forget you, Mrs Anna?'

Finally, Rouchota discusses whether such *na* interrogatives really fit the definition of rhetorical questions. Real questions are defined in RT as utterances which encode that the propositional form of the utterance represents a thought which is entertained as an interpretive representation of a relevant thought (253; Sperber and Wilson 1988). Moreover, this thought is relevant to the speaker. A rhetorical question is similar except the thought is indicated as relevant to the HEARER (e.g. as a reminder viz. 'What was your New Year's resolution?' asked to help somebody stop smoking (253, 274)).

Now the *na* rhetorical questions are similar to real questions in that 'the thought interpreted by the question is itself an interpretation of an [in this case] attributed thought' (274) and the thought is relevant to the speaker (not the hearer as in the rhetorical question). However, the thought represented is already available to the speaker, and so it is not a true real question. But, as we have noted, it is not a rhetorical question either, because it is relevant to the speaker rather than the hearer (or at least more relevant). Rouchota concludes that these *na* rhetorical questions best fit the RT description of exclamatives (e.g., 'How tall Jane is!' (274)) in which the thought represented by an exclamative is already available to the speaker and it is regarded as relevant to the speaker herself (274). (It is also interpretive of a desirable thought vs. descriptive of a state of affairs). This analysis is in accordance with Modern Greek grammars which regard such *na* interrogatives as possibly exclamative (274).

In general, Rouchota's article will be very useful for the field linguist dealing with subjunctive and rhetorical questions.

Matsui ('Assessing a scenario-based account of bridging reference assignment') criticizes the scenario or script-based explanation of identifying ambiguous referents. This is when the hearer constructs a mental model of what the speaker is saying as soon as it is possible to do so, (211) (and then identifies the referent). This mental model or 'scenario' is processed in two stages—the secondary stage taking place only when the primary one has failed to identify the referent. The referent is supposedly identifiable either due to an explicit or implicit (i.e. pronoun) mentioned in the context. Matsui shows where the scenario-based account fails to choose the correct referent, often because the referent is not in the currently activated scenario (231). He prefers to relate the scenario approach to the encyclopedic entry of the concepts in a proposition. This encyclopedic knowledge includes scenarios, but has other types of information as well (238). There is not much new in this article with respect to his earlier one, but another major theoretical proposal on bridging reference is evaluated with respect to RT.

The title of Wilson and Sperber's article ('Pragmatics and time') may be misleading as it is not primarily an article on tense, as one might be inclined to expect from the title. Instead the article deals with the pragmatic circumstances (causal, temporal) related to the interpretation of coordinated clause clusters. (There is much overlap here with Carston's article so only the significant differences are relevant.) The authors organize their paper around three issues in conjunct interpretation illustrated by (1-3) below:

(1) Peter left and Mary got angry. ('sequencing')
(2) They planted an acorn and it grew. ('interval')
(3) John dropped the glass and it broke. ('cause-consequence')

Specifically, the authors deal with the issues (1-3) above and show how the principles proposed by Grice (e.g. 'be orderly') and others fail to account for the data by making either too strong or unclear predictions with their principles. Of interest here is their discussion of the 'interval problem' which they broaden to include not only tense but other linguistic constructions (deictics, comparative adjectives, and even lexical items) in which intervals are 'left open by the semantics and narrowed down in the pragmatics' (288). Consider the example below:

(a) I have had breakfast. (tense)
(b) I have been to Tibet (288)

The difference between (a) and (b) above is that (a) requires a narrower interval to achieve contextual effects; that is, having breakfast is not normally relevant if it happened a long time ago (as it is assumed that breakfast-taking is normal activity) whereas (b) visiting Tibet might be relevant whenever it happened. The hearer has to look for the minimal set of contextual effects that would make the utterance worth his attention (290). Thus, he will narrow down the interval to make it relevant to himself (since narrower intervals are associated with greater contextual effects (290)), which means that (a) will be interpreted as having been done in the recent past. The semantics of the tense indicates an interval in time from the utterance stretching backwards, and the pragmatics inferentially fills in the interpretation by narrowing the interval to gain effect.

Similarly, the semantics of the deictic *here*, comparative adjective *fast*, and lexical item 'working mother' (c-e) below are inferentially enriched by 'narrowing' to mean (relative to each particular context) 'a place worth mentioning', 'fast enough to be worth mentioning', and 'belonging to some subset of working mothers whose properties are such that the fact that Mary belongs to it is worth mentioning' (291).

(c) I've been here all day (deictic)
(d) Bill has a fast car (comparative adjective)
(e) Mary is a working mother (lexical item) (289)

The authors give a useful discourse analysis tool when they describe the possible (temporal) relationships between two events/states and give examples both with and without the conjunction *and* (282):

(a) the first mentioned state/event happened before the second;
Example: I took out my key and opened the door (277)
Example: John dropped the glass. It broke (277)

(b) the two were simultaneous;
Example: It was dark and I couldn't see (282)
Example: Bill smiled. He smiled sadly (282)

(c) the second happened before the first;
Example: Well, the glass broke, and John dropped it (295)
Example: I got caught. My best friend betrayed me (283)

(d) no ordering, or some subtler ordering, is pragmatically understood;
Example: That night, our hero consumed half a bottle of whiskey and wrote a letter to Lady Anne (283)

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Tomoko Matsui ('Bridging reference and style') again examines the phenomenon of bridging reference. In this paper, he examines another approach to the matter (Clark 1977) which depends on PLAUSIBILITY, SHORTNESS, and COMPUTABILITY as criteria of selection of the bridging assumption, rejecting it again in favor of an RT approach. He discusses the notion of style in terms of RT processing effort cost vs. contextual effect benefits. These factors, as well as the accessibility of adequate bridging assumptions and further suitable contextual information, (which varies individually and culturally) are behind stylistic felicity judgments of referent identity (430).

Mary Lou Grimberg ('On Nunberg on indexicality and deixis') is in the main a review article of Nunberg (1993) in which she modifies his theoretical apparatus to better account for troublesome pronoun reference data. Of relevance to *Notes on Linguistics* readers is the description of the FIGURATIVE USE of pronouns and the theoretical apparatus behind such a description. It seems that even pronoun reference can be more complicated than one would normally expect.

In (a) below, the 'he' does not refer to the painting itself, but to the painter (e.g., Marc Chagall):

(a) (Pointing to a painting) Now he knew how to paint goats! (358)

This leads Nunberg/Grimsberg to posit a difference between deixis and INDEXICALITY together with a three component stage of processing such figurative uses of pronouns. This type of processing centers around the INDEX which is the item in the context that is picked out by the linguistic reference (e.g. *that, you*) (346). It is not a complex of coordinates that are assigned values (the so-called 'direct-reference' theory) but is in a metonymic relation to its referent—a 'relation of contiguity' (Pierce) (347). The INDEX in this sense is an object (possibly abstract) that signifies or stands for another entity (347).

The DEICTIC COMPONENT indicates what the index is (352-53). The CLASSIFICATORY COMPONENT adds semantic information (person, number, and gender), but rather than referring to the index (deixis) it is associated with the deferred referent (Ibid.). The precise difference in the direction the two components POINT can be illustrated in (b) below which is uttered by a salesperson with respect to two different (representative) types of plates:

(b) THESE are over at the warehouse, but THOSE I have in stock here (352/Nunberg 24).

In (b), the deictic component is involved with the proximal/distal distinction between the actual plate (singular) in the salesperson's vicinity, as opposed to the one further off (distal). The classificatory component stipulates the plurality of the intended correlates of the plates (the deferred referent) which are in the warehouse. The RELATIONAL COMPONENT specifies the correspondence between the (deferred) referent and the index. So, in (b) the deictic component (in this case, pointing) identifies the index (the painting, not the painter), the classificatory component stipulates the semantic features (such as 'animate, male', singular) of the HE which refers to the deferred/ultimate referent, not the painting itself, and the relational component stipulates that the index must be relevantly and appropriately related to the referent (i.e., the painting must be relevantly related to the HE) (359). The RT approach is RELEVANT to the pragmatic processing of this RELEVANT RELATION and also more generally with respect to the theoretical distinction between INTERPRETIVE USE (figurative use) and DESCRIPTIVE USE. Thus, pronouns used as in (b) above are interpretively used.

Grimberg closes her paper with an emphasis on the fact that PURE DEIXIS (i.e. reference that doesn't have a contextual index in the manner described above) is just as much speaker centered as OTHER centered (375). The deictic center is of course one of the theoretical bases for the description of deixis (so her emphasis isn't new in that sense), but perhaps intuitively deixis is thought of as being OUT THERE oriented. So, the utterance 'Boris is to the left of Olga' really means 'Relative to Charlie, Boris is on Olga's left' (374). Deictic utterances always involve a proposition that is partially describing the speaker him/herself.

The article also includes a thought-provoking discussion of the difference between deixis and anaphoric reference. Grimberg's paper (more particularly Nunberg's paper on which it is based!) breaks new ground in the description and interpretation of deixis. The paper, however, suffers from section-level stops and starts in which a topic is introduced partially and then deferred. It is unnecessarily difficult to determine the difference between indexicality and deixis and the author's position relative to it. Both of these make reading through the paper unnecessarily difficult.

Robyn Carston ('Metalinguistic negation and echoic use') investigates the type of negation in which the form or other aspect of an utterance is negated rather than its truth-content value. It is in a way analogous to correcting the punctuation on a paper versus correcting the content. For example, in utterance (a) below, it is not two different animals (e.g. civet vs. mongoose) that are compared and one negated, in which case one animal would be the right answer and the other the wrong (normal negation), but it is the correct pronunciation of the plural for the same truth-content item which is negated. This is just one example of a wide variety of these type of 'metalinguistic' constructions.

(a) You may have seen some mongeese but as far as I'm concerned I saw some mongooses (326)

The author surveys the linguistic criteria for these types of constructions. These include: to have a CONTRADICTION intonation contour, a rejoinder to a previous utterance, a construction requiring pragmatic reanlysis, a construction constituting a logical contradiction, and a construction being meta-represented or quoted (323). It is concluded that it is the meta-representational criterion (echoic use) which is the only necessary and sufficient one (332). These constructions do not constitute a natural class or linguistic sentence type (Ibid.). However they do differ from NORMAL negation with respect to the ability to include positive polarity items in their scope and inability to handle morphological negation (due to the fact that the scope of the metalinguistic negative outside the phrase or sentence being echoed) (334). The author admits that the distinction between meta-linguistic negation and regular counter-assertion (focus) is not a sharp one due to the fact that sometimes it is not clear whether it is truth-content or choice of lexis that is at issue (335), though there are some formal signals of the difference between the two (337). Similarly, it is difficult to determine whether a positive endorsement expresses simple agreement or a positive echo (336).

Echoic use can apply not only to specific items of a proposition (like mongeese vs. mongooses above) but to whole thoughts or utterances. There are extra effects associated with echoing an utterance or other item because when echoed it allows opportunity for the speaker to indicate his/her attitude to the echoed material. One of the added contextual effects of meta-linguistic negation mentioned by the author is (mild) humor (324), though, surprisingly, there is no further discussion on the matter. With negative echoes in general (different than meta-linguistic negation), an effect of expressing ridicule often co-occurs (e.g. irony), but the difference in effect between regular negation and metalinguistic-negation is not further discussed.

Reiko-Itani ('A relevance-based analysis of hearsay particles: Japanese utterance-final *tte*') shows that the use of *tte* itself does not indicate a particular degree of speaker commitment. Different degrees of speaker commitment are contextually inferred with the help of *tte* indicating that the proposition is second-hand information (380-81). This (see also Blass 1990) contradicts the assumption that use of a hearsay particle necessarily means that there is less commitment to it on the part of the speaker (cf. Palmer 1986).

There is also a helpful breakdown of the 'interpretive-use' category in RT. Interpretive use refers to an utterance when it represents/resembles another in terms of analytic and contextual implications (vs. truth-conditional representation which is descriptive use). For example: direct speech, reported/indirect speech, interrogatives, exclamatives, and echoic utterances are all examples of this general term. Attributive use is the interpretation of a thought or utterance (one's own or another's) in which relevance is achieved by 'informing the hearer that someone else or the speaker in the past has said something or thinks something ...' (383; Sperber and Wilson 1986). Echoic use is the same except that relevance is achieved by 'informing the hearer of the fact that the speaker has in mind what some individual(s) say/think and has a certain attitude toward it' (383). The author embeds these uses within each other (calling them 'sub-cases' of each other (383)) such that interpretive use includes attributive and echoic uses, and attributive use includes echoic use, but the author's own discussion shows that the latter subordination doesn't accord with the data. Or at least, it is shown that a linguistic item marking attributive use doesn't imply that it marks echoic use as well. The hierarchy seems not to be implicational.

It is significant to note which range of interpretive use utterances *tte* marks as different languages seem to linguistically mark and divide the spectrum in different ways (cf. Blass1990 on Sisaala); *tte*, for example, can only echo utterances, not thoughts (385), though a thought of the SPEAKER can be echoed, based on the author's hypothesis that because we have direct access to our own thoughts, they can be treated like other's utterances (394). The author also shows that attributive use can be pragmatically understood inferentially without *tte*, but *tte* is used to explicitly mark it, thus increasing overall relevance of an utterance by reducing processing effort involved (384).

The author's technical RT definition of *tte* is that it does not encode CONCEPTUAL meaning, but instead is a PROCEDURAL marker (i.e., it has to do with mental computations or constraints on the hearer's inference process, rather than contributing to mental representations or the logical form representation of an utterance (395)). However, earlier the author explains that though hearsay particles like *tte* do not contribute to the truth-conditions of the main utterance, they bear their own truth-conditions and they can be true or false in their own right (390). It remains unclear how a PROCEDURAL (vs CONCEPTUAL (390)) marker like *tte* can be said to have TRUTH CONDITIONS (which entails being able to be falsified and describing a state of affairs)—something which might be considered having more to do with CONCEPTUAL meaning. This criticism may be resolvable, but it certainly points to the fact that the definitions of, and interrelationships among, these types of important theoretical RT terms needs more clarification.

This problem may be due in part to Blakemore's (1987:14) original distinction between PROCEDURAL SEMANTICS and CONCEPTUAL SEMANTICS where the label SEMANTICS seems to be used very loosely indeed as it is not clear just what sort of MEANING a PROCEDURAL marker encodes. It also might have to do with the exact nature of TRUTH CONDITIONS which even Sperber and Wilson are backing away from (UCLWPL 2:109):

> It is not obvious, then, that there is a consistent and comprehensive enough set of intuitions about the truth conditions of an utterance to bear much theoretical weight.

The RT model has presented an exciting new avenue of inquiry into phenomena such as speech act force, participant reference, particle analysis, and many other such phenomena which have to do with utterance interpretation. It provides a principled way to account for the cognitive and inferential process of human communication. However, unlike, for example, Langacker's Cognitive Grammar model (1987a;1991) the theory at the moment does not provide a holistic approach to language structure. Indeed, the general syntactic theory to which RT has been wedded (perhaps unfortunately) is that of Government and Binding. However, RT theory itself concentrates on the interpretive aspects of communication and so matters of perhaps more general syntax is not its concern. Others might challenge the seemingly sharp distinction in RT between semantics and pragmatics.

The notion of high-level explicature seems to need more work. There appears to be no theoretical constraints on the generation of these for any particular proposition such that one could have an unlimited number generated. This would seem to put a strain on the processing component. On what theoretical basis are explicatures of ADMITTING, CONFESSING, SAYING, TELLING, and GENERATED grounded? Moreover, sometimes a proposition is both a proposition and an explicature. Explicatures also can be embedded (e.g., 'I am expressing surprise that someone says that X is Y'), which seems problematic if the explicature is HIGH LEVEL. These issues may be resolvable within RT, but at the moment the notion of high-level explicature does not seem to be wholly satisfactory, especially when the discussion results in discussions of main vs. sub-proposition LEVELS and separate utterances within the same sentence, etc. At this point, the theory is losing its elegant simplicity.

In some of the RT articles, real language data (from outside the author) are used in analysis. However many of the articles (on English particularly) only include contrived data. Since many of the authors are mother-tongue speakers of English, this is not so much a problem as native speaker intuitions are important and their data acceptable. Several huge databases of natural spoken English exist. It is a shame that the RT analyses do not use these more often. Use of non-contrived data would certainly lend more weight to their conclusions. It is of course not always possible to get the exact type of data desired, but use of non-contrived data should be a goal.

Finally, it is understandable for authors or editors to strive for equal use of the feminine and masculine third person pronouns, as these volumes do. However, when this pressure results in the EQUAL variation of the pronouns within, not only the paragraph but the clause cluster level, it definitely results in a case of increased processing effort without commensurate contextual effects. Equality of pronouns should take place at section or article level, and not below.

REFERENCES

Blakemore, Diane. 1987. Semantic constraints on relevance. Oxford: Oxford University Press.

Blakemore, Diane. 1989. Denial and contrast: A relevance theoretic analysis of 'but'. In Linguistics and Philosophy 12:15-37.

Blass, Regina. 1990. Relevance relations in discourse: A study with special reference to Sisaala. New York: Cambridge University Press.

Clark, H. L. 1977. Bridging. In Thinking: Readings in cognitive science, edited by P. Watson and P. Johnson-Laird, 411-420. Cambridge: Cambridge University Press.

Clifton, John. 1995. Review of University College London Working Papers in Linguistics, Volume 1, Robyn Carston, ed. Notes on Linguistics 68:43-46.

de Jong, Jan. 1980. On the treatment of focus phenomena in functional grammar. In Perspectives on functional grammar. Edited by Teun Hoekstra, Harry van der Hulst, and Michael Moortgat. Dordrecht: Foris.

Dik, Simon. 1980. On the typology of focus phenomena. In Perspectives on functional grammar. Edited by Teun Hoekstra, Harry van der Hulst, and Michael Moortgat. Dordrecht: Foris.

Floyd, Rick. 1993. The Structure of Wanka Quechua evidential categories. PhD dissertation.

Follingstad, Alison J. 1991. Aspects of Tyap syntax. M.A. Thesis. University of Texas Arlington.

Grice, H. P. 1969. Studies in the way of words. Cambridge, Mass.: Harvard University Press.

Langacker, Ronald. 1987a. Foundations of cognitive grammar. Vol 1: Theoretical prerequisites. Stanford: Stanford University Press.

Langacker, Ronald. 1991. Foundations of cognitive grammar. Vol 2: Descriptive application. Stanford: Stanford University Press.

Longacre, Robert E. 1983. The grammar of discourse. Topics in Language and Linguistics. New York: Plenum Press.

Nunberg, Geoffrey. 1993. Indexicality and deixis. In Linguistics and philosophy 16, 1-43.

Palmer, Frank Robert. 1986. Mood and modality. New York: Cambridge University Press.

Sperber, Dan and Deidre Wilson. 1986. Relevance: Communication and cognition. Oxford: Blackwell.

Spreda, Klaus. 1994. Notes on markers of parallelism in Meta. In Discourse features of ten languages of West-Central Africa. Stephen H. Levinsohn, editor. Dallas: SIL.

Vandepitte, Sonia. 1993. A pragmatic study of the expression of causality conjuncts and conjunctions in modern spoken British English. Brussels: Paleis der Academien.

Vendler, Z. 1967. Linguistics in philosophy. New York: Cornell University Press.

Wilson, Deidre and Dan Sperber. 1987. An outline of relevance theory. Notes on Linguistics 39:5-24.

_________. 1988. Mood and the analysis of non-declarative sentences. In Human Agency: Lanaguage, duty and value. Dancy, J., Moravczik and C. Taylor, editors. California: Stanford University Press.

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Reviews of Books

English vocabulary elements. By Keith Denning and William R. Leben. Oxford: Oxford University Press. 1995. 255 pp. Paperback $14.95.

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Do you remember much of your high school Latin? What about college Greek? Well, this book will remind you of things that went on when you were memorizing vocabulary. But *English vocabulary elements* (EVE) is really intended for advanced high school and college students who are preparing for educational aptitude and other admission tests. One way it helps such readers is to demonstrate that many English words have been built from Latin and Greek. In addition some of the lessons in EVE may also help foreign students who are studying English prior to university or college.

Without surprise then, there is a definite bias in EVE towards English as the primary world language. The authors' comment on its precision and adaptability, its constantly evolving nature, and its enormous vocabulary (460,000 words, basing their count on Webster's Third New International Dictionary), as reasons for its world-wide use.

There are 12 chapters and two appendices in the book which can be divided as follows: facts about English and its history (chapters 1, 2, and 10); word formation processes (3, 4, and 6); word formation related to Latin and Greek (9, 11, and 12); semantics (7); sociolinguistics (8); and phonetics (5). Each chapter concludes with a number of exercises to help the readers build their vocabulary.

Chapter 3, which deals with morphology outlines a useful set of data illustrating how words are formed in English, with examples of compounds, zero derivation (e.g. deriving a noun from a verb without the use of any prefixes or suffixes), back formation, folk etymology, analogy, clipping (info < information), blending (smoke + fog = smog), acronyms, and sound symbolism.

The phonology processes related to numerals and number words which are spelled out in Chapter 6 are helpful. The authors illustrates:

nasal assimilation (con + pose > compose)
voice assimilation (reg + t + or > rector)
total assimilation (in + leg + al > illegal)
deletion (anti + agon + ize > antagonize)
insertion (path + __ + log > pathology)

There are many such useful examples that could be used in beginning morphology classes.

The chapter on semantics (7) is brief, mentioning polysemy, homonymy and semantic shift, with examples of the latter in metaphor, metonymy, and synecdoche. The exercises for this chapter focus on cognate morphemes in which both the resemblance and the relation of meaning is said to be problematic, e.g., seminary 'a place where seeds are sprouted and matured' > 'school of religion'.

EVE says little about variation in English, except that 'correctness is relative' (116) and that word choice will aid in clarity of communication. The exercises focus on varieties of pronunciation and simplifying long and difficult words and phrases (such as 'reconnoitering a nocturnal sanctuary accompanied by an assemblage of martial spelunkers').

If you are still interested in the Latin and Greek sources of affixes in English read Appendix I (in two parts: Latin and Greek sources in the first; English glosses with Greek and Latin morphemes in the second). It provides a comprehensive list with examples such as: cap/cep/caput/capit 'head' < Latin; cosm 'universe, order, ornament < Greek.

EVE concludes with Appendix II, consisting of 9 morpheme sets, divided and illustrated so that they will be 'easy' for the student to memorize. Each set has the morpheme, gloss, mnemonic(s), and other example words. For example, morpheme set 2 includes: ab-/abs- 'from, away' [abreact, abstract]: abolish, abdicate, abstruse, ablative, absolute.

As I indicated at the beginning of this review, EVE can be a useful book for those still learning English vocabulary, such as national translators and foreign students. I am not convinced that the preponderance of Latin and Greek etymological examples will serve such students as well. They could easily be overcome, as I was; however, I did not succumb to pneumonoultramicroscopicsilicovolcanoconiosis (said—p. 8—to be the longest word in English and listed in the *Guinness Book of World Records*) which is some sort of a lung disease caused by the inhalation of extremely fine particles of volcanic silicon dust.

Try it out—you may be encouraged to look at some Latin and Greek again,at least for a little while. See what your friends who are learning English think of the exercises. My feeling is that the effort will not be commensurate with the benefits.

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The emergence and development of SVO patterning in Latin and French. By BRIGITTE L. M. BAUER. New York: Oxford University Press. 1995. 242 pp. Cloth $45.00.

Reviewed by KEIR HANSFORD
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As the title suggests, the author's main aim is to show a pattern of development and change in word order in Latin throughout its history, continuing right through to Medieval French, and occasional reference to Modern French. Central to her argument is that Latin was a Left-branching language at the time of the earliest inscriptions, but it developed into a Right-branching language—French. So Latin was, despite its variable word order, basically SOV (Subject-Object-Verb), and French is now SVO. (VO is Left-branching, OV is Right-branching). However it is not just the position of the Object in relation to the Verb that interests her. She sets out to show that the basic order within Phrases, and even the order of morphemes within inflected forms was Left Branching (LB) in early Latin and now Right Branching (RB) in French.

Bauer argues in a linear fashion, as one teaching students a step-by-argument. I will therefore take her chapters in the order in which she presents them so that we can grasp her argumentation.

Basic to her argument is the notion of Head and Complement. In her reworking of the original X-Bar model, she argues for a Head and Complement at every level of syntax, so that at each level there is an element which is syntactically superior and a sister which is subordinate. This leads her to remove the distinction between a Complement and a Specifier, and to maintain a binary branching at all levels. If the Complement is to the left of the Head, this is called LB, and vice versa.

The author also insists that Morphology be treated in the same way and not just as independent of syntax and SVO typology. This leads her to argue that an inflectional morpheme is the Head of its stem. So where Latin order was Stem-suffix, this she calls LB. This is necessary to show that morphemes underwent a diachronic shift in the same direction as free form elements, but at the same time changing into free forms. Thus she maintains that, e.g. the future-perfect form in Latin was Stem-suffix *am-av-erit*, and reversed and freed in French to become freeform and stem *il aura amié* 'he will have loved'. The weakness here is, of course, that French still retains the suffix on the participle. Not only that, the French verb conjugations remain persistently Stem-suffix, but Bauer conveniently by-passes this awkward fact.

Bauer's Chapters 3-5 then make a detailed diachronic analysis aiming to show the shift from LB to RB, as Old Latin evolved through its own history and then became French. Table 1 is a summary of some of the forms she intends to show have shifted.

In short the chart intends to show that in Latin Complement preceded the Head (=LB), but in French the Head precedes the Complement (=RB).

Yet were we not told at school that Latin had a free word order because the inflections told you which was subject, object, etc.? Bauer objects to this misconception. She maintains that the evidence is that Latin was an SVO language. She frequently cites Oscan and Umbrian texts contemporary with or earlier than early Latin to show the same word order. That was the natural order. All other orders are marked for stylistic or syntactic (and why not pragmatic?) reasons. As Table 1 shows, the shift was not only from LB to RB, but from synthetic (bound) forms to analytic (free) forms. She is forced to admit that the change from bound morphemes to free forms took place more slowly than the free form shift from LB to RB. In fact, she says this proves that it was not the shift from bound to free forms that motivated the shift from LB to RB since the latter was already under way across the syntactic board much earlier. Thus she refutes Lehmann and Venneman who claimed that it was changes in the Verb that triggered the whole typological reorganization. She claims that the LB to RB shift is a universal tendency, but to prove that would be beyond the remit of her theses.

In short the chart intends to show that in Latin Complement preceded the Head (=LB), but in French the Head precedes the Complement (=RB).

Latin			**French**	
		Phrases		
Object *exercitum*	Verb *duxit*	‘he led the army’	Verb *il conduisit*	Object *l'armée*
Adverb *leniter*	Verb *ridere*	‘to smile kindly’	Verb *rire*	Adverb *doucement*
Adjective avidus	Copula est	‘he is greedy’	Copula il est	Adjective avide
Noun *temporis*	Postposition *causa*	‘because of the time’	Preposition *à cause*	Noun *du temps*
Pronoun *me*	Postposition *-cum*	‘with me’	Preposition *avec*	Pronoun *moi*
Adjective *longissimus*	Noun *truncus*	‘a very long trunk’	Noun *un tronc*	Adjective *très allongé*
Genitive *deorum*	Noun *munus*	‘the present of the gods’	Noun *le present*	Genitive *des dieux*
Referent *Paulo*	Comparative *grandior*	‘bigger than Paul’	Comparative *plus grand*	Referent *que Paul*
		Inflected Forms		
Adjective *grand*	Degree *-ior*	‘bigger’	Degree *plus*	Adjective *grand*
Noun *leg*	Ending *-ibus*	‘with laws’	Preposition *avec*	Noun *des lois*
Verb *am*	Ending *-av-erit*	‘he will have loved’	Aux/Pronoun *il aura*	Verb *aimé*

Table 1

How does all this work out in detail? With regard to the Genitive-noun, the shift from GN to NG already took place in the Latin period. The addition of the preposition *de* 'of' in French was the last stage.

As for Adjectives, she distinguishes even in Latin the Descriptive Adjective, which preceded the noun, and Distinctive (derived from names, or expressing a kind of affiliation or definition) which followed the noun. She treats Adjective-noun (AN) (i.e. LB) as normal and NA as marked. We know that Modern French has both AN and NA, but she says AN is very limited and is a remnant of the Latin LB.

[Unfortunately the shift in Determiners (possessive, demonstrative, article, indefinite, interrogative, cardinal numeral) proves more difficult to plot, along with the appearance of the article.]

In contrast to the Noun Phrase, the Verb Phrase delayed its shift to RB. The natural position of the verb was at the end of the sentence. V-initial was highly marked. In Classical Latin, V-medial became more common. V-initial became common in narrative in Late Latin (see the Vulgate), but this was still marked. The copula however is a clearer case of shift. In Latin it followed its complement. If it preceded its complement, it marked a negation or affirmation. The use of Copula and Present Participle was known, even in Old Latin, but became more popular in Late Latin, avoiding difficult morphology. The logic that this became more prominent in French she rightly avoids since Copula and Present Particle is not usual. Bauer also mentions the emergence of *habeo* 'I have' as an Auxiliary in addition to the Stative *esse* 'to be', marking a shift from an Aspectual system to a Tense-based system.

Coming on to the subject matter of the title of her book, Bauer claims that even in Old French SVO was the unmarked order, but SOV could be found in subordinate clauses. Subject inversion (especially pronominal) is still a feature of Modern French, but is only peripheral to the shift from OV (= LB) to VO (= RB).

When it comes to the Adposition, even early Latin had prepositions, evidencing an even earlier shift from proto-Indo-European postpositions. It is not clear to me if she is saying that the anomaly of pronoun-*cum* as against *cum* noun is a remnant of an earlier period or a highly marked form, e.g.:

cum Caesare nobiscumque
with Caesar us-with-and
'with Caesar and with us'

More easy to plot is the shift from a noun in an Oblique Case to Preposition and Noun, with Case becoming less syntactic and more stylistic, until it eventually disappeared.

One of the longer and more difficult sections traces the shift in Comparative forms. Of more interest (to me at least) was the revelation that the earliest forms of Relative Clause were Correlative constructions (e.g., 'WHAT is allowed to Jupiter, THAT is not allowed to a bull'). The shift to Post-Head Relative clauses, as we know them in French and English, proves the shift from LB to RB.

In Chapter 6 Bauer then digresses into Psycholinguistics by picking data from those who have studied the acquisition of language by children in various languages, some LB (e.g. Turkish and Japanese) and some RB. Some interesting results were: Turkish children mastered their agglutinative morphology quicker than Russians mastered their complex fusional morphology. This was independent of whether RB syntax was easier to master than LB. It is in the Relative Clause that the advantages of RB showed: Japanese children had difficulty with the pre-head relative clause, which has no Relativiser. Similarly Turkish children had difficulty with their syntactic form which involves a genitive and verb particle. They were found to employ a finite verb preceded by a quasi relativiser. Bauer wishes to use this as evidence that RB (at least in syntax) is easier to learn and so it is likely to be a universal shift (since many LB languages have RB Relative Clauses, but few RB languages have LB Relative Clauses).

In view of Bauer's yet unproved statement that the shift from LB to RB is a universal tendency (were all Proto languages LB?), field linguists should be on the lookout for data to prove or falsify her claim. This may not be easy where there is no written literature available from the past.

Readers will find Bauer's style somewhat repetitive, especially from the middle of the book onwards. But maybe that is no bad thing. She does, however, give helpful summaries at the end of chapters and sections. By the end of the book we already know several times over what she intended to prove. With the exceptions of the verb morphology, I think she has proven her case from the data cited.

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The phonology and morphology of Kimatuumbi. By DAVID ODDEN. The Phonology of the World's Languages. Oxford: Oxford University Press, 1996. 315 pp. Cloth $80.00.

Reviewed by RON MOE
SIL—Eastern Africa Group

Kimatuumbi is a Bantu language spoken in Tanzania. The book is written from the theoretical perspective of lexical phonology and clearly reflects years of careful, in depth, and accurate elicitation.

The book is divided into three main areas: a 19-page introduction describing the theoretical orientation; a 58-page overview of the morphology; and then the bulk of the book covering the phonology with sections on segments, syllable structure, tone, external sandhi, and rule interaction. Two glossed texts are included in an appendix.

The primary theoretical contribution of the book is the evidence presented that lexical rules access information in neighboring words. For instance Kimatuumbi has a vowel shortening rule which can be stated: 'Shorten long vowels in a stem, if the stem is the head of a phrase and is followed by material in the phrase.'

na-a-kálaangite	'I fried'	*na-a-kálangite chɔ́ɔlyá*	'I fried food'
I-PAST-fry		I-PAST-fry food	

The rule is conditioned both by word internal morpheme boundaries (the rule does not apply to a prefix), and to word external syntax. The consequence of this observation is that syntax must be ordered before lexical phonology.

Several phonologists working in the framework of lexical phonology have made the suggestion that the output of the lexical level be used in a practical orthography. Since lexical rules in Kimatuumbi are conditioned by neighboring words, for a given word there is no single output of the lexical level which can be consistently used in a practical orthography. Instead the output of the lexical level can vary depending on the environment.

One implication for Kimatuumbi is that surface tone can be used in the orthography since there are no postlexical rules affecting tone. However the tone will vary depending on the syntactic context. Consequently the writing of tone helps the reader interpret the syntax but does not present the reader with a consistent appearance for each lexical item. However, since this parallels the spoken language, it should not pose a problem in reading.

One disappointment with the book is that the data are not systematically presented in paradigms. There is only a short paradigm of 19 verbs in several tenses with several prefix combinations contained in an appendix. Although the author accounts for tone perturbations in several syntactic environments (utterance initial, utterance final, phrase final, phrase medial), there is no comprehensive overview of the phenomenon. Bantu languages, such as Echizinza, can have as many as six tone patterns on nouns such as *ama-ta* 'Cl.6-milk', depending on context. Since tone and some segmental rules are affected by syntactic and phonological context, it would have been helpful to include complete (or sufficiently representative) paradigms organized by syllable type, tone class, and environment.

For instance, in order to check one aspect of the analysis, it took me several days of painstaking searching to piece together the following incomplete paradigms of -CVCV noun roots shown in Table 1. The first column indicates the noun class. The first row indicates the proposed underlying tone class. For each tone class the first column is the word in isolation, the second column is phrase final, and the third column is phrase medial.

The claim is made that there are only three tone classes (LH, LL, HL). The difference in Class 5 nouns can be explained by assigning the prefix to level 3 of the phonology. The Class 9 noun *ndáno* 'cover' follows the tone pattern of LL nouns, but also occurs in Class 6 as *matánó* 'covers', showing that it is actually HL. The difference can be explained by the fact that the Class 9 prefix is underlyingly a syllabic nasal (whereas the Class 1 and 3 prefixes are underlyingly and historically *mu-*). The discrepancy between *kiyúni* and *iyuni* 'birds' in phrase final position is probably an error in the data.

What is not explained by any rule is the discrepancy between *kiyuni* and *kilibe* 'thing' in phrase medial position. The situation is paralleled in -CVVCV roots where four tone patterns are also found. The author collapses two of the patterns into a single tone class and proposes a special rule to account for the fourth pattern which has only 12 members. However one is left wondering if perhaps Kimatuumbi really has four tone classes in disyllabic noun roots. Without complete paradigms and more data on other syntactic environments, the reader can only wonder.

Despite these defects, the book succeeds in its goals of presenting a wealth of data and a consistent analysis of that data. The rules are well supported by numerous arguments, and in the very few cases where the author is

Cl	LH			LL			HL		
	# _ #	_]	_...]	# _ #	_]	_...]	# _ #	_]	_...]
1	n-gulé		n-gulé				n-témí	n-témi	n-témi
2							a-mátí		
3	m-paká			n-kóta		n-kota	m-púkó		m-púko
4	mi-paká						mi-púkó		mi-púko
5	lii-yawá		lii-yawá				lii-lóbe		lii-lobe
6	ma-yawá		ma-yawá	ma-gúlu			ma-lóbé	ma-lóbe	ma-lóbe
7	ki-pokó			ki-yúni	ki-yúni	ki-yuni	ki-síwá	ki-síwa	
				ki-líbe		ki-líbe			
8	i-pokó			i-yúni	i-yuní	i-yuni			n-dano
				i-líbe		i-líbe			
9	m-baká	m-baká	m-baká	n-gúbo	ɲamá	n-gubo	n-dáno	n-danó	
11				lu-gúlu			lu-límí		lu-límí
12	ka-pokó		ka-pokó	ka-ɲáma		ka-ɲama	ka-púko		
13	tu-pokó		tu-pokó				tu-púkó		

Table 1

unable to account for the data he candidly admits it. Although a prior understanding of lexical phonology and rule conventions is helpful, the introduction explains the basics and it is quite possible to follow the prose without it.

The book is valuable in numerous ways. It illustrates the need for accurate and exhaustive elicitation. It demonstrates the need for in depth analysis as a basis for orthography development. It is an excellent example of a full phonological write-up in a current theory. It is a source of insights into Bantu linguistics. It challenges some of the claims of lexical phonology.

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Cognitive linguistics in the Redwoods: The expansion of a new paradigm in linguistics. By EUGENE CASAD, editor. 1996. New York: Mouton de Gruyter. 1012 pp. Hardback $254.00.

Reviewed by CRAIG SODERBERG
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According to the theory of Cognitive Linguistics, we organize our knowledge by means of structures called idealized cognitive models, and category structures and prototype effects are by-products of that organization. Casad's 'Cognitive Linguistics' volume divides into five sections: definition, theory, and history of Cognitive Linguistics; morphological structures and lexicon; grammatical structures; language use; and finally, various applications of Cognitive Linguistics to three Amerindian languages. Cognitive Linguistics is generally seen to be in contrast to Transformational Generative Linguistics in that the latter is based on the notion that syntax is autonomous from semantics. In this brief book review, I comment on five articles selected from sections II, III and IV of Casad's volume.

In 'The cognitive frame of a set of cricket terms', Willem Botha analyzes lexicographic definitions taken from four different dictionaries of Afrikaans, viewing them against the background of the culture-based conventionalized knowledge which is contained in what he calls 'the cricket frame'. He concludes that the conceptualization of different cricket terms takes place in relation to an intrinsic point of orientation. For example, the definition of a term such as BATSMAN involves the fact that BATSMAN acts as an intrinsic point of orientation. For an adequate lexicographic definition of this term, the lexicographer, as both perceiver and as conceptualizer, must go onstage with the BATSMAN and imagine himself as the batsman. Botha uses a cognitive model to illustrate that neglecting the intrinsic deictic point-of-orientation in this regard will constantly lead to an inadequate definition—and such a definition would not reflect the correspondence between conceptual knowledge and linguistic structure and behavior. This new perspective from Cognitive Linguistics should help the field lexicographer produce a more adequate product.

Bruce Horton focuses on a different domain of grammar in 'What are copular verbs?' He shows that, in the inventory of English copular verbs, there is a category prototype as well as a range of copula types that diverge from that prototype in various ways. Horton illustrates that the traditional classification of words into 'word classes' ignores intermediate positions between 'two categories of description'. Langacker (1987:14ff) reminds us of the difficulty of using 'sharply dichotomous' (criteria-attribute) models when categorizing 'gradient phenomena'. Horton reclassifies the gradient phenomena of copularity into a scale of eight levels ranging from non-copulas to clear central copulas. This study shows that class membership for copular verbs is not an all-or-nothing affair but is rather a matter of degree. Horton's article should help field linguists in development of grammars and lexicographies.

Kemmer and Shyldkrot turn our attention to the French propositions *á* and *de*, noting that these prepositions often appear in similar syntactic contexts, but with a distribution that seems entirely arbitrary. Thus, infinitival complements, for example, may be introduced by either *á* and *de*. The authors' goal is to show that semantic properties of *á* and *de* motivate their occurrence in the constructions in which they introduce infinitival complements. They find that there is no clear dividing line between the 'meaningful usages' of *á* and *de* and the 'meaningless usages'. Basically, even prepositions involving infinitives can be meaningful. Kemmer and Shyldkrot note that the question of the meaningfulness of grammatical elements is essentially independent of the degree of obligatoriness in the occurrence of these elements. This article disputes the often tacit assumption, still widespread among linguists, that if an element is obligatory, its presence therefore cannot be semantically motivated.

A central theme of Langacker's formulation (1987) of Cognitive Grammar is that grammar sanctions usage, but that this sanctioning is not absolutely determinative of the form that an expression assumes in a given case. David Tuggy's paper on the 'double is' construction in English illustrates quite well some of the implications of this point of view. An example of the 'double is' construction is given below:

> The thing is is that people talk that way.
> The question is is why?

The 'double is' construction is characterized by a short definite noun phrase whose head is ordinarily the word THING. This noun phrase is followed by two occurrences of the word IS. These in turn are typically followed by the complementizer THAT and a finite clause. The finite clause itself may be quite long. In his paper, Tuggy presents a picture of an erroneous construction being partially sanctioned by a few established patterns of English grammar and then becoming grammaticalized to take its own position within the grammar. In this position, then, it is now beginning to sanction its own use. It is hard to see how any of this could even take place if language was entirely rule-governed as the generativists would have us believe.

The final section of this volume deals with Amerindian languages. Rick Floyd explores the domain of the reportative suffix *-shi* in the Wanka dialect of Peruvian Quechua. Floyd assumes a view compatible with that expressed by Langacker (1987), i.e. the forms that linguistic structures take are motivated by human cognitive processing. Floyd shows that the usages of the Wanka reportative suffix *-shi* all fit into a radially structured category in which the extended usages are motivated by a central prototypical usage or by one or more of the extensions of that prototype. Floyd finds four distinct usages of *-shi*. In its prototypical use, *-shi* indicates that an utterance is based on hearsay. In a second use, *-shi* marks authoritativeness of the source for folklore. A third use occurs in riddles, whereas the fourth is one that Floyd labels 'a challenge construction'.

Of what value is this information to the field linguist or translator? There are many languages with some degree of evidentiallity encoded. Derbyshire's study (1976) of the Hixkaryana language of Brazil, for example, notes that speaker's attitudes and relationships to narrated events are expressed by modal particles which follow the verb. How does a translator handle the hearsay particle when the speaker is reporting what someone else told him—events which he himself did not witness? Floyd's article illuminates the complexity of this problem and provides a model to emulate in thinking through similar structures in other languages.

REFERENCES

Langacker, Ronald W. 1987. Foundations of cognitive grammar. Vol. 1: Theoretical prerequisites. Stanford, CA: Stanford University Press.

Derbyshire, Desmond. 1976. Translation problems arising from the speaker's attitude or relationship to the events he narrates. Notes on Translation 60:19-23.

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Grammaticalization. By PAUL J. HOPPER and ELIZABETH CLOSS TRAUGOTT. Cambridge Textbooks in Linguistics. New York: Cambridge University Press. 1993. 256 pp. Hardcover $59.95, paper $18.95.

Reviewed by THOMAS WILLETT
SIL—Mexico Branch

This book is an excellent introduction to grammaticalization as a specialized area of linguistics. It is also intended for use by students of related disciplines, but many of the explanations and examples cannot be fully appreciated without a thorough knowledge of the principles of linguistic structure and inquiry. Yet the presentation is well enough organized that the non-expert can get an overview of the basic issues addressed without wading through the detailed discussions.

For instance, the authors concisely define grammaticalization on the first page: '... the process whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions, and, once grammaticalized, continue to develop new grammatical functions'. They also clearly state why the study of grammaticalization is important: because it '... touches on many of the topics that have been central to work in linguistics, whether synchronic or diachronic—most particularly the domains of morphosyntax and morphology'.

The organization of the book well supports the main theme and guides the reader efficiently through the different aspects of grammaticalization. Chapter 1 introduces the topic with the familiar example of English GOING TO changing to GONNA. Next it gives a preliminary classification of grammatical forms: syntactic periphrasis, derivational morphemes, clitics, and inflectional morphemes. It then goes on to define the notion of a cline of grammaticalization to describe the gradual nature of grammaticalization over time. The chapter concludes with several other examples of grammaticalized morphemes from both familiar and lesser-known languages.

Chapter 2 is a short history of the study of grammaticalization as a linguistic phenomenon, from the time Meillet coined the term early in this century up to the present. Especially helpful is the concluding section of current trends which shows where the major areas of difference are among researchers and what are the questions they are asking.

In Chapter 3 the authors begin their discussion of the mechanisms of grammaticalization by discussing the two most often cited in the literature: reanalysis and analogy. They not only illustrate these processes with specific language examples, they also relate them to other topics of interest, such as word order change and rule generation. Then, in Chapter 4, they continue the discussion of change mechanisms by describing the role played by pragmatic inference. They show that the two main forms of pragmatic inference used in conversation (i.e. metaphor and metonymy), play integral roles in the generalization of meaning that accompanies the reduction of form.

Chapter 5 addresses the hypothesis of unidirectionality. Here the authors are careful to distinguish between the processes that contribute to semantic or structural generalization and decategorialization and those that appear to work against them. They discuss three processes typical of grammaticalization: specialization, in which the choice of grammatical forms becomes reduced as certain ones become generalized in use; divergence, in which a less grammatical form splits into two, one maintaining its former characteristics while the other becomes more grammatical; and renewal, in which old forms are renewed as more expressive ways are found of saying the same thing. By proposing not only multiple paths of development but ones very closely tied to the supporting data, they are able to show that apparent counterexamples to unidirectionality are, in fact, not examples of grammaticalization at all, but of other normal linguistic processes. These other normal processes operate at the same time such that they tend to muddy the waters. Even so, they point out that unidirectionality is at best a strong universal tendency—not an absolute principle.

Chapters 6 and 7 help to place the process of grammaticalization in the broader context of morphosyntax. Chapter 6 discusses grammatical changes that occur within the clause, while chapter 7 discusses those that occur between clauses. Some examples of clause-internal grammaticalizations are the development and positioning of clitics; the relation of semantic 'relevance' to the ordering of fused affixes; the development of paradigms; and argument structure marking. Some example of cross-clausal grammaticalizations are the development of coordinating versus subordinating structures; the generalization of clause linkers; and the development of complex sentence constructions, including relatives.

Chapter 8 closes out the book with a brief look at topics peripheral to the study of grammaticalization, such as child versus adult language acquisition, paremetric changes versus grammaticalization, and evolutionary versus contact-induced change. Although this book is written in the form of a basic textbook, the style is uncluttered and pleasant. One can easily avoid getting lost in the forest of examples by reading the topic paragraphs of each section and then skimming the remaining paragraphs for the main points. In this way one can gain a quick overview of grammaticalization without getting bogged down in the controversial issues that surround it. If at any point more information is desired, one could take any of the authors' numerous suggestions for further reading which are backed up by an extensive bibliography.

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■

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Backley, Phillip and John Harris, eds. 1996. Working papers in Linguistics 8 (UCL). (Research reports by staff and postgraduates of the Dept. of Phonetics and Lingusitics). London: University College. 623 pp.

Bailey, Charles-James N. 1996. Essays on time-based linguistic analysis. New York: Oxford University Press. 423 pp. Cloth $99.00.

Bailey, Kathleen M. and David Nunan, eds. 1996. Voices from the language classroom. Qualitative research in second language education. New York: Cambridge University Press. 480 pp. Hardback $49.95, paper $23.95.

Bierwert, Crisca, ed. 1996. Lushootseed texts: An introduction to Puget Salish narrative aesthetics. Studies in the anthropology of North American Indians. Lincoln: University of Nebraska Press. 325 pp. Cloth $40.00.

Bloomer, Robert. 1994. System-congruity and the participles of modern German and modern English: A study in natural morphology. Hamburg: Helmut Buske Verlag. 124 pp. $58.00.

Booij, Geert. 1995. The phonology of Dutch. New York: Oxford University Press. 205 pp. Cloth $49.95.

Briggs, Charles. 1996. Disorderly discourse: Narrative, confllict, and inequality. New York: Oxford University Press. 248 pp. Cloth $49.95, paperback $24.95.

Cinque, Guglielmo. 1996. Italian syntax and universal grammar. New York: Cambridge University Press. 332 pp. Hardback $64.95.

Henry, Alison. 1995. Belfast English and standard English: Dialect variation and parameter setting. Oxford studies in comparative syntax. 148 pp. Cloth $49.95

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Plank, Frans, ed. 1995. Double case: Agreement by suffixaufnahme. New York: Oxford University Press. 500 pp. $75.00.

Sampson, Geoffrey. 1995. English for the computer: The SUSANNE corpus and analytic scheme. New York: Clarendon Press, Oxford. 499 pp. Cloth $90.00.

Schütze, Carson T. 1996. The empirical base of linguistics: Grammaticality judgments and linguistic methodology. Chicago: University of Chicago Press. 253 pp. Cloth $28.95.

Senft, Gunter. 1996. Classificatory particles in Kilivila. Oxford studies in anthropological linguistics. New York: Oxford University Press. 394 pp. Cloth $75.00.

Vikner, Sten. 1995. Verb movement and expletive subjects in the Germanic languages. New York: Oxford University Press. 294 pp. Cloth $65.00; paper $35.00.

Yamada, Haru. 1997. Different games, different rules: Why Americans and Japanese misunderstand each other. New York: Oxford University Press. 166 pp. $24.00 ■

Lexicography Workshop

The Summer Institute of Linguistics at the University of Oregon, as part of its regular offerings, will be sponsoring a lexicography workshop from 23 June to 15 August, 1997. The workshop will be led by Valentin Vydrine, of the European University of St. Petersburg, Russia. Dr. Vydrine is a specialist in the lexicography of West Africa, and is currently compiling a massive comparative dictionary of the Manding languages. This workshop will be designed for linguistic and anthropological fieldworkers who are in the process of preparing a dictionary of an underdescribed language.

For more information on the workshop and other offerings of the Summer Institute of Linguistics at Oregon, please contact Tom Payne (tpayne@oregon.uoregon.edu).

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From the Linguistics Department

Many readers of *Notes on Linguistics* are currently at some stage of dictionary-making, a task which often spans several years or even decades. Practical tools, such as SIL's SHOEBOX, a computer database program, have gained widespread usage among field linguists and greatly facilitate the lexicography task. While most of our readers may already be aware of helpful publications for this task, I'd like to draw attention to two recent works which dictionary compilers should find quite useful:

> Coward, David F. and Charles E. Grimes. 1995. Making dictionaries: A guide to lexicography and the Multi-Dictionary Formatter. Waxhaw NC: Summer Institute of Linguistics. 234 pp.
>
> Newell, Leonard E. 1995. Handbook on lexicography for Philippine and other languages. Manila: Linguistic Society of the Philippines. 368 pp.

The work by Coward and Grimes was previewed in *Notes on Linguistics* 66:5-25. This publication, including diskette with Multi-Dictionary Formatter (MDF) software, is available from the SIL Dallas Bookstore, 7500 W. Camp Wisdom Rd, Dallas TX 75236, or Internet e-mail: academic_books@sil.org. MDF is intended for use as a print formatter and reversed-index-generator accompanying SHOEBOX. But this published 'guide to lexicography' is much more than a simple manual for explaining how to use computer software. Nearly half of the 234 pages constitute a linguistically savvy exploration into the broader academic world of lexicography. Newell's work, also available from the SIL Dallas Bookstore, likewise assumes use of software such as SHOEBOX (p. 234 ff).

One example of an excellent, recently published dictionary having taken advantage of SHOEBOX software is van den Berg's Muna-English dictionary, reviewed below.

Muna - English Dictionary. By RENÉ VAN DEN BERG, in collaboration with La Ode Sidu. Leiden: KITLV Press (Koninklijk Institut Voor Taal-, Land- en Volkenkunde). 1996. 737 pp. $91.50.

This is the first major dictionary to be published by a member of SIL's Indonesia Branch, and it is impressive—with roughly 7000 entries, hardback; and very nice typesetting, page layout, and paper.

Muna is a regional language of southeast Sulawesi. This dictionary is a sequence to van den Berg's 1989 *A grammar of the Muna language*, also published by KITLV. The two works (grammar and dictionary) are the result of the author's ten years of linguistic field work. The book aims to be useful both to Muna speakers and to the academic community (particularly linguists and anthropologists), and tends toward being encyclopedic.

Lexicographers wrestle with how comprehensive to be in their dictionary compilation—a messy issue, given that one person could easily devote an entire lifetime to such a task and still not feel he or she has been complete. Van den Berg addressed this issue by aiming for his dictionary to cover all the lexical items discovered from three distinct approaches:

- by generating a concordance from a sizable body of natural texts;
- by generating all possible disyllabic phonological sequences, with Muna speakers identifying actual definable Muna words among them;
- by exploring important semantic domains (e.g. fauna, weapons, musical instruments, kinship, games, marriage, death, burial).

Another thorny issue for lexicographers concerns what information to place in subentries. These Van den Berg uses to catalog words formed by certain derivational affixes with an 'unpredictable thematic consonant' and those that are 'category-changing'.

The dictionary includes eight pages of grammatical information focusing on inflectional affixes. Special concern is given to aiding the dictionary user who is not a native-Muna-speaker to be able to adequately parse Muna text.

The English-Muna side of the dictionary consists of a reverse index in a smaller font. This is a computer generated reversal with some subsequent editing. The result is that under an entry like 'plant (kinds of)', there are some 90 Muna words listed without further contrastive information. The reader must consult the Muna-English side of the dictionary to distinguish these 90 items. But this has become a standard practice for publishing minority-language dictionaries, due to the high cost of paper publication.

Van den Berg is explicit that the dictionary is incomplete in areas like low frequency words and in cataloguing dialect variation, flora, fauna, and stylized language such as poetry—but 700 pages is an impressively complete dictionary. One could only wish that a similar dictionary and grammar might exist for the thousands of minority languages around the world.

—David Payne, Editor

Introduction to Government and Binding Theory: Binding Theory

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In this article, we finally learn what Binding Theory is and why it is so important that it is part of the name of the overall Government and Binding framework (Chomsky 1981, 1982, 1986). In its narrowest conception, binding involves reflexive constructions, such as (1). Equi constructions, such as (2), also fall under Binding Theory, however, as do the various types of movement constructions considered in the last two articles in this series (February and May, 1997), exemplified in (3)-(5). Further, we will see that *pro*-drop constructions (which English does not allow), shown for Spanish in (6), are also accounted for by Binding Theory.

(1) Sue likes herself.
(2) Bill tried to win the race.
(3) What did Jill give to you?
(4) The homerun was hit by Joey.
(5) Kim is likely to win the prize.
(6) *Hablo español* 'I speak Spanish'.

It is most likely unclear at this point what the examples in (1)-(6) have in common. Let's start with reflexive constructions and build the Binding Theory step by step (section 1), and then seek to unite all the constructions above (section 2). We will also work through the analysis of the equi constructions (2) in section 3.

1. Binding and Command Relations in Reflexive Constructions. We saw in Article 5 (May, 1997) that Case Theory determines whether a nominative pronoun, such as *she* or *he*, is used instead of an accusative pronoun, *her* or *him*, or a genitive pronoun like *his*. It is Binding Theory's job to determine when a reflexive anaphor, for example, *herself*, is used instead of one of the pronouns, *she* or *her*.

Consider the following data, where 'her/*herself' means *her* is grammatical but *herself* is not (similarly for 'she/*herself' and other combinations).

(7) She/*herself shuddered.
(8) Sally enjoyed herself at the party.

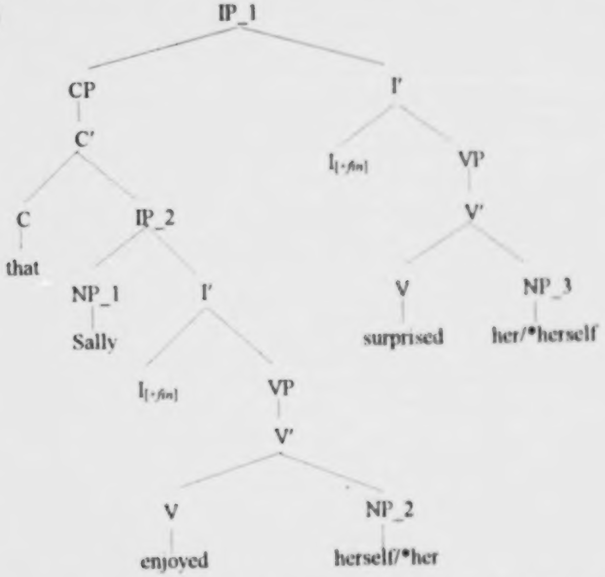
(9) Sally left a note for herself.
(10) Sally thought that Max disliked her/*herself.
(11) Sally talked to John about himself.
(12) Sally talked to John about herself.
(13) Sally believed that she/*herself would succeed.
(14) That Sally might succeed amazed her/*herself.
(15) That we had seen Sally in the street amazed her/*herself.
(16) That Sally enjoyed herself/*her surprised her/*herself.

What basic generalizations can be gleaned from this data?

a. Reflexive pronouns must corefer with some NP before them in the sentence.
b. There is a locality condition for this coreference relationship. Examples (13)-(16) suggest that the antecedent, which is the NP that the reflexive corefers with, must be within the same minimal clause (=CP) as the reflexive.

The S-structure tree for (16) is given in (17) to make the same/different clause distinction clearer. The NP following *enjoyed* (marked as NP_2) can be the reflexive *herself* because it is coreferent with the NP_1 *Sally* in the same CP. NP_3 following *surprised* may also refer back to NP_1 *Sally*, but the reflexive *herself* is ungrammatical in that position because the locality condition is not met.

(17)



We need more definitions before we can formulate the binding conditions more precisely. Just like the government relation, the following command and binding relations are based on the phrase structure.

The first definition is that of c-command (Reinhart 1976), which formally expresses the notion of 'higher in the tree than'.

α C-COMMANDS β iff

a. α does not dominate β, and
b. the first branching node that dominates α also dominates β.

In this definition (and others to follow) α and β stand for particular categories. For example, in tree (17) we can let α be NP_1 *Sally* and see if it c-commands NP_2 *herself* (= β). Clause (a) of the definition requires that NP_1 does not dominate NP_2. This is true because NP_1 is not directly above NP_2 in the same branch of the tree. Clause (b) requires that the first branching node that dominates NP_1, which is IP_2, also dominates NP_2. IP_2 does dominate NP_2, so NP_1 c-commands NP_2. (Note that NP_1 also c-commands everything else under IP_2 on the right branch.)

Now let's check whether NP_1 *Sally* c-commands NP_3 *her* according to the definition. This time we set α = NP_1 and β = NP_3. Clause (a) is met because NP_1 does not dominate NP_3. Clause (b) fails, however, because the first branching node that dominates NP_1 is still IP_2 and NP_3 is not under (dominated by) IP_2.

A simple way to think of c-command is to start with your α category, go up the tree one level to where it branches, then α c-commands everything down in the other branch. So, if the category you are concerned about (β) is in that other branch, α c-commands β.

As you might have guessed, c-command is one of the conditions on binding. Before we go on with the specifics of binding, though, we are ready to understand a similar command relation, called m-command, that is used for government.[1]

α M-COMMANDS β iff

a. α does not dominate β, and
b. the first maximal projection that dominates α also dominates β.

We can see how c-command and m-command differ using the simple X-bar tree in (18). If we choose the NP specifier to be α, we know from above that it c-commands everything in the right branch below the maximal projection XP. M-command will give exactly the same results for this choice of α; in simple terms, m-command says to go up the tree from α until you reach a maximal projection, then α m-commands everything in the other branches below that maximal projection. The reason c-command and m-command give the same results in this case is that the first branching node above the specifier is also the first maximal projection above it.

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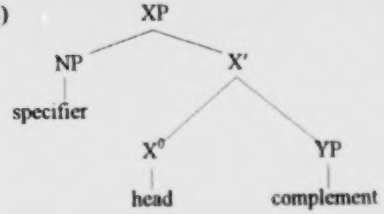
[1] Review Article 5 if necessary for explanation of the notion of government and see the revised definition below. Also, there is actually a whole family of command relations. See Barker and Pullum (1990) for formal discussion.

(18)



The difference between these two types of command relations shows up when α is a head X^0. Now the first branching node above X^0 is X', so the head only c-commands its complements, as in the subcategorization relationship. M-command, however, reaches up to the maximal projection and then goes down the other branches, so both the complements and the specifier are included.

This is exactly what is needed for government. In fact, m-command provides the same upper limit as clause (b) of the definition of government given in Article 5, so the revised definition is:

α GOVERNS β iff

a. α is a head [±N,±V] or $I_{[+fin]}$ or $C_{[fin]}$, and
b. α m-commands β, and
c. every XP (other than IP) that dominates β also dominates α

Returning now to the binding conditions, the official definition of binding simply adds coindexing to the c-command relation. Coindexing is marked in the tree via subscripts and indicates that the two NPs refer to the same entity.

α BINDS β iff

a. α commands β, and
b. α and β are coindexed.

We can further distinguish between A-binding and Ā-binding just as we did with movement. A-binding is binding by an antecedent in argument (=subject or complement) position, and Ā-binding is when the antecedent is in a non-argument position.

α A-BINDS β iff

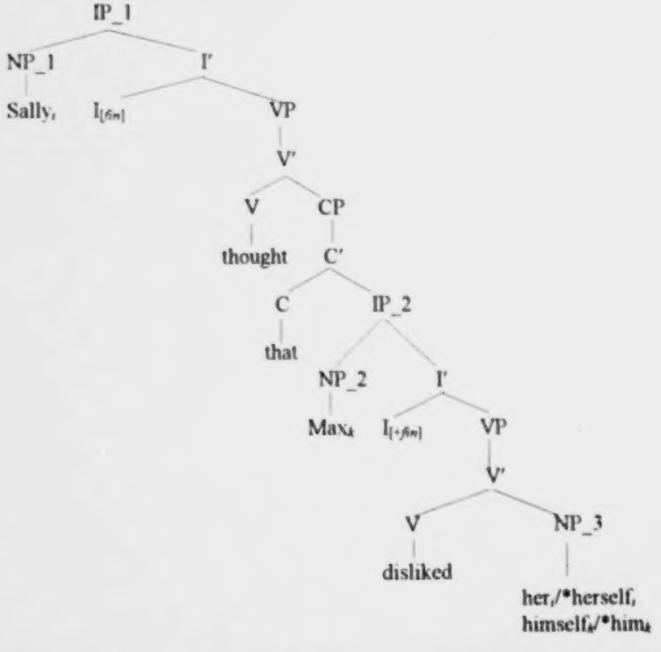
a. α is in an argument position, and
b. α binds β.

A simpler way to think of A-binding that works most of the time is:

> An NP is A-BOUND if it is coindexed with a higher NP in either a subject or object position.

We can illustrate this new definition of A-binding using the tree in (19). NP_1 *Sally* and NP_2 *Max* are both in argument position and they both c-command the object of *disliked*, NP_3, and are coindexed with it. Therefore, NP_3 is A-bound.

(19)


IP_1
NP_1
I'
Sally$_i$
I$_{[fin]}$
VP
V'
V
CP
thought
C'
C
IP_2
that
NP_2
I'
Max$_k$
I$_{[+fin]}$
VP
V'
V
NP_3
disliked
her$_i$/*herself$_i$
himself$_k$/*him$_k$

But A-binding alone does not explain all the options for filling NP_3. Why must we use *her* and not *herself* to refer back to *Sally*, while just the opposite is true with respect to *Max*? We still need conditions to rule out the ungrammatical cases.

The Principles of Binding Theory determine whether a pronoun or an reflexive anaphor is correct in a particular position.

Principles of Binding Theory

A. Anaphors (e.g. reflexives and reciprocals) must be A-bound in their governing category.
B. Pronouns must not be A-bound in their governing category.
C. Full NPs (also called denoting expressions or R(eferential)-expressions) must not be A-bound.

Principle A says that an anaphor can only be used when the position that A-binds it is local enough. In tree (19), NP_2 *Max* is close enough to NP_3 so that the anaphor *himself* is correct; NP_1 *Sally* is too far away to use *herself* in NP_3.

Principle B says that a pronoun can only be used if it is not A-bound at all, or if its A-binder is far enough away. This is why *him* cannot be used in NP_3 to refer back to NP_2 *Max* but *her* may refer back to NP_1 *Sally* in (19).

Finally, Principle C says that nonpronominals may not be A-bound at all. This is to rule out repetition of full nominals.

(20) *John$_i$ hit John$_i$.
(21) *Sally$_i$ thought that Max$_k$ disliked Sally$_i$/Max$_k$

Defining this local domain that requires an anaphor and cannot have a coreferent pronoun has been problematic. We saw above that a basic generalization is that the antecedent and the anaphor must be in the same clause. This works for most cases, but there are a few exceptions (e.g., *Sally is eager for herself to succeed*) where the anaphor and antecedent are not in the same clause. The local domain is therefore defined in terms of government and subjects,[2] since most anaphors have antecedents that are subjects.

> The GOVERNING CATEGORY is a local domain which denotes the minimal category which contains both a subject and the governor of the element in

---

[2] Actually, the formal definition requires that there be a SUBJECT, which includes an NP subject, and NP possessor for binding within an NP, or agreement features in $I_{[+fin]}$.

question. This minimal category is usually finite IP or an NP containing a possessor (which qualifies as the subject).

In tree (19), the governing category for NP_3 is IP_2, since it contains both a subject (=NP_2 *Max*) and the governor for NP_3 (=V *disliked*).

Working with the binding principles can get confusing since the definitions are nested one within another, but, in about 99 percent of the cases, these simplified principles will work:

Simplified Principles of Binding Theory

A. Reflexives and A-traces must be coindexed with the closest subject above them.
B. Pronouns cannot be coindexed with the closest subject above them.
C. Full NPs and A-traces must not be coindexed with any subject or object above them in the tree.

2. Extending Binding Theory Beyond Reflexives. As seen in the last section, the Principles of Binding Theory recognize that the class of nominal phrases is partitioned into three different types: anaphors, pronouns, and full NPs. These partitions are characterized by the two features [±anaphoric] and [±pronominal], where reflexives and reciprocals are [+ana,-pro], pronouns are [-ana,+pro], and full nominal phrases are neither pronominal nor anaphoric so they are [-ana,-pro].

The chart in (22) shows these featural distinctions and which Principle of Binding Theory applies to each. Empty categories are also included, since both Extended Standard Theory (which came out of Transformational Grammar) and GB claim that the chain coindexing established by movement is equivalent to the coindexing in binding relationships between overt nominals. Four types of empty categories are recognized, corresponding to the four possible feature specifications, as explained further below.

(22) **Featural Distinctions for Overt NPs and Empty Categories**

Features	Binding Principle	Overt Nominals	Empty Categories
[-pro,+ana]	A	e.g. *himself*	trace of A-movement
[+pro,-ana]	B	e.g. *him*	*pro*
[-pro,-ana]	C	e.g. *John*	trace of Ā- movement
[+pro,+ana]	A/B		*PRO*

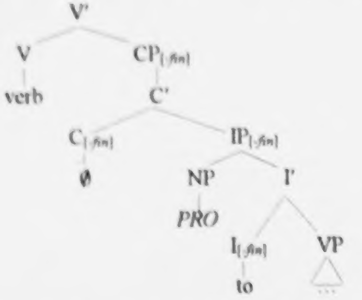
We talked about the trace of A-movement in passive and unaccusative constructions in Article 5. By saying that the trace of A-movement is anaphoric and thus subject to Principle A, we restrict the movement to only local domains. We also saw the trace of Ā-movement in the formation of content questions in Article 4. This trace is subject to Principle C, which requires that it cannot be bound by an element in an argument position. But Ā-movement is movement to a nonargument position by definition, so this requirement is clearly met.

The two new empty categories are not traces, but empty elements in the lexicon. The first of these, *pro*, is the empty pronoun allowed in *pro*-drop languages, usually because of agreement morphology on the verb to specify the person and number of the subject, e.g. *pro Hablo español.* (See (6).) This empty pronoun shows up in all the same places that an overt pronoun does and is therefore subject to Principle B.

Finally, *PRO* is the empty subject in non-finite clauses, sometimes called controlled *PRO*. Since it is both anaphoric and pronominal, *PRO* is subject to both Principles A and B of Binding Theory. From this is derived the fact that *PRO* must be ungoverned: the only way it could be A-bound inside its governing category and not be A-bound in its governing category is if it does not have a governing category because it does not have a governor. Further, if *PRO* does not have a governor, it cannot receive Case, since Case is assigned by the governor. Overt NPs of all types are required to have Case at S-structure by the Case Filter (see Article 5). This explains why there cannot be an overt counterpart to *PRO* with the [+pro,+ana] feature specifications.

The requirement that *PRO* must not be governed at S-structure means that it can only be in the configuration shown in (23). This position is ungoverned because the V cannot govern past the CP maximal projection, and neither the null C nor the I$_{[-fin]}$ *to* may govern. Note also that since this position is ungoverned and therefore cannot receive Case either, only *PRO* can fill it. Other NPs and traces filling the specifier of IP$_{[-fin]}$ cannot have a CP headed by a null C above them; either the complementizer *for* must be present, or the main verb simply subcategorizes directly for an IP$_{[-fin]}$.

(23)



Both *pro* and *PRO* have intended reference, even though they are null. Since they are referential, they bear a semantic role, unlike the dummy *it* seen in constructions like *It is likely that Sue will come*. (This construction was analyzed in Article 5.) We'll see examples of how and where *PRO* is used in the next section.

3. Equi Constructions. How can we analyze (24)-(26)?

(24) I would like to leave by noon.
(25) I hate to swim in that pond.
(26) I would like to have finished the homework by midnight.

Non-derivational theories such as Head-Driven Phrase Structure Grammar (HPSG) (Pollard and Sag 1994) assume that, in examples like (24), *like* simply subcategorizes for a VP$_{[-fin]}$, which in English must be marked by *to*. Consider what happens if we try such an analysis within the assumptions of GB. Possible subcategorization frames for the two main verbs in (24) are shown, followed by the tree structure in (27).

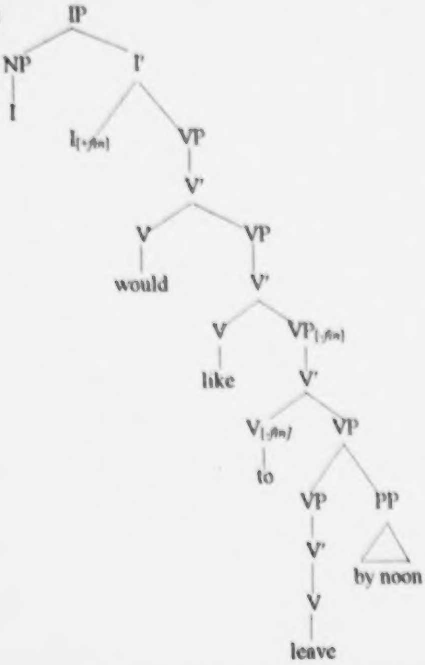
like V [__ VP$_{[-fin,to]}$]

like' <EXP, EVENT>

leave V [__]

leave' <AGT>

(27)



There are two problems for this analysis within the GB framework. First, we have said earlier that *to* is I$_{[-fin]}$. Allowing *to* to be either I$_{[-fin]}$ or V$_{[-fin]}$ is possible, but less constrained. The second and greater problem is that there is no place for the semantic role for the external argument of *leave* to be assigned.

Considering more data will aid us in finding a better proposal:

(28) I would hate to be chosen by the committee.

(29) I would like to be appreciated by someone.

We need to take into account the meaning of these sentences, our assumptions about the linking of semantic roles to syntactic positions (see Article 5), and the fact that (28)-(29) are synonymous with:

(30) I would hate for the committee to choose me.
(31) I would like for someone to appreciate me.

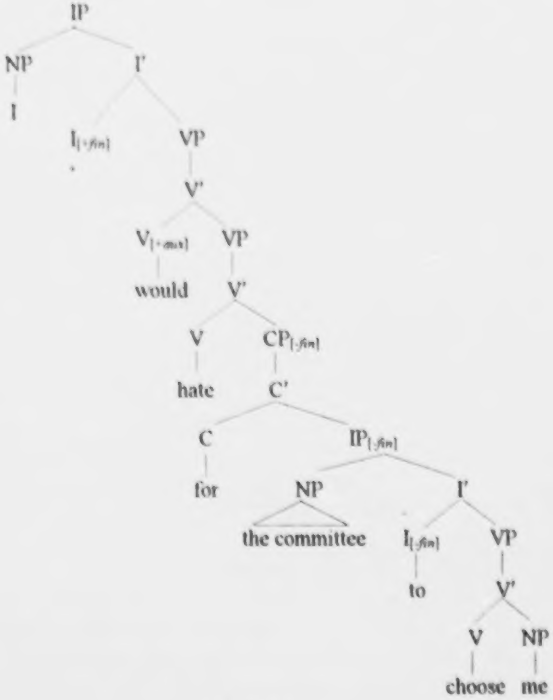
Based upon examples (30)-(31), we can propose that the subcategorization frame for *like* is instead:

like   V   [__ $\mathrm{CP}_{[-fin]}$]
|
like'   <EXP, PROP>

This allows the presence of a full embedded clause so that passive can take place within the lower clause, as in (28)-(29), and subjects may be expressed, as in (30)-(31).

The D-structure for (30) is straightforward, as shown in (32).

(32) D-structure


IP
NP
I
I'
I[+fin]
VP
V'
V[+aux]
would
VP
V'
V
hate
CP[-fin]
C'
C
for
IP[-fin]
NP
the committee
I'
I[-fin]
to
VP
V'
V
choose
NP
me

But this subcategorization is still not the full story for (28)-(29), nor does it answer the question of how we generate (24)? Compare:

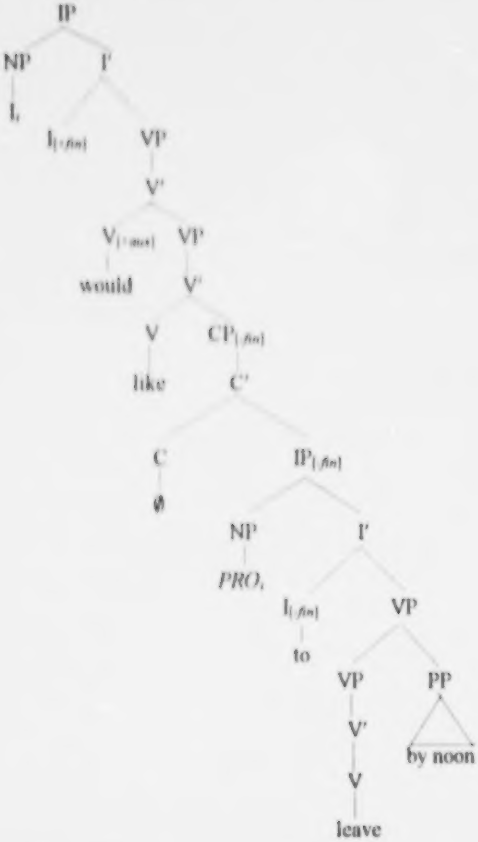
(33) *I would like for me/myself to leave by noon.

The standard Transformational Grammar account of (24) is called Equi Deletion, where (in GB terms) the D-structure for (24) has a full CP$_{[-\mathit{fin}]}$ as the complement to *like*, as in (33), and then the complementizer *for* and the subject NP delete when the NP is coindexed with the subject of the main clause.

GB chooses another way, because it does not like deletions. The other option is to assume the positions were never filled since we have the possibility of using an empty category for the coindexed subject NP: *PRO*. The C$_{[-\mathit{fin}]}$ is always Ø when *PRO* is the subject, but it is always *for* when there is an overt subject (e.g., **I would hate the committee to choose me*). The null C is not a governor, so the specifier of IP$_{[-\mathit{fin}]}$ would not be governed, nor would it receive Case. This exactly meets the requirements for *PRO* (as seen in section 2) but is disallowed for overt NPs.

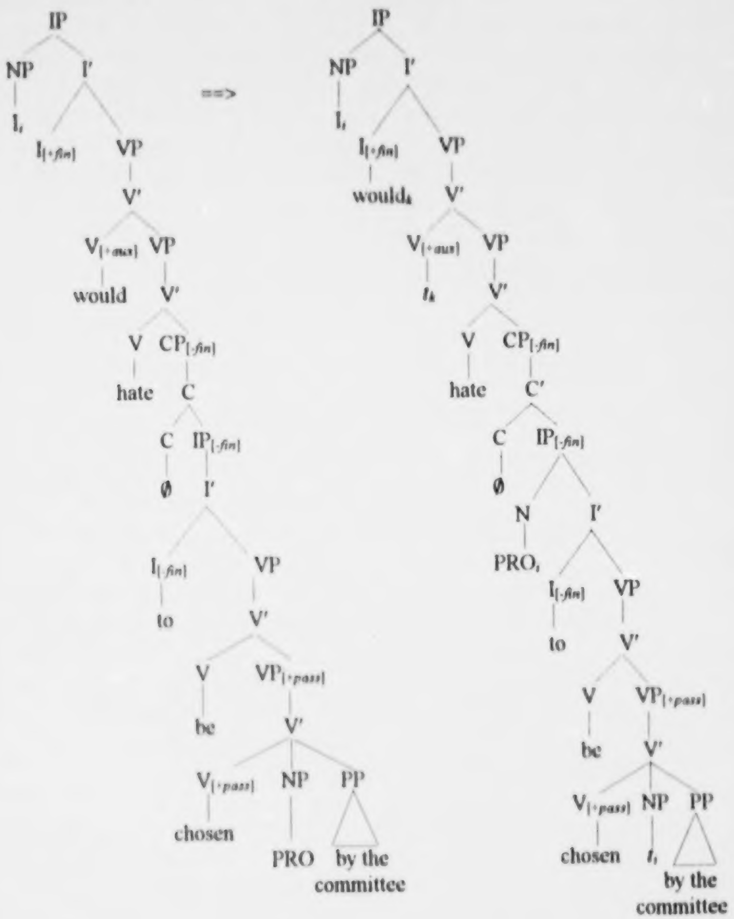
The D-structure for (24) is shown in (34). The S-structure would be identical, except that the auxiliary *would* in the main clause would have moved to the I$_{[+\mathit{fin}]}$ position (as discussed in Article 4).

(34) D-structure


IP
NP
I'
I_i
$I_{[+fin]}$
VP
V'
$V_{[+mod]}$
VP
would
V'
V
$CP_{[-fin]}$
like
C'
C
$IP_{[-fin]}$
∅
NP
I'
PRO_i
$I_{[-fin]}$
VP
to
VP
PP
V'
by noon
V
leave

To review how Passive movement interacts with these equi constructions, the derivation for (28) is shown in (35).

(35) D-structure S-structure


IP
NP
I'
I$_i$
I$_{[+fin]}$
VP
V'
V$_{[+aux]}$
VP
would
V'
V
CP$_{[-fin]}$
hate
C
C
IP$_{[-fin]}$
Ø
I'
I$_{[-fin]}$
VP
to
V'
V
VP$_{[+pass]}$
be
V'
V$_{[+pass]}$
NP
PP
chosen
PRO
by the committee
==>
IP
NP
I'
I$_i$
I$_{[+fin]}$
VP
would$_k$
V'
V$_{[+aux]}$
VP
t$_k$
V'
V
CP$_{[-fin]}$
hate
C'
C
IP$_{[-fin]}$
Ø
N
I'
PRO$_i$
I$_{[-fin]}$
VP
to
V'
V
VP$_{[+pass]}$
be
V'
V$_{[+pass]}$
NP
PP
chosen
t$_i$
by the committee

Compare the D-structure in (35) with that given for the synonymous sentence (30) in (32). *PRO* is filling the same semantic role in (28) as the overt pronoun *me* is in (30), so they both begin as the object of *choose*. But, even though the passive verb *chosen* cannot assign Case to *PRO*, it can still govern it, forcing *PRO* to move to meet the Binding Principles by S-structure.

GB claims that the various types of predicates which take embedded clause complements can be accounted for with the correct subcategorization frame. In the case of nonfinite clause complements, either *PRO* or A-movement (raising) will be involved when there is no overt NP in the embedded subject position in the surface string. The key distinction between the A-movement constructions (known earlier as Subject-to-Subject Raising and analyzed in Article 5) and the constructions involving *PRO* (also known as Subject-Subject Equi) is whether or not the main predicate assigns a semantic role to its subject position.[3] Idiom chunks and the possibility of the dummies *it* and *there* provide 'tests' to help determine this. Consider:

(36) a. John is likely to win the race.
b. The roof is likely to cave in.
c. It is likely that John will win the race.
d. There is likely to be no solution to her dilemma.

(37) a. John tried to win the race.
b. ?The roof tried to cave in.
c. *It tried that John will win the race.
d. *There tried to be no solution to her dilemma.

The predicate *is likely* is a raising predicate that does not assign a semantic role to its subject position; either of the dummy NPs can fill the position (36c-d), or an idiom chunk can raise to it and still maintain the idiomatic reading (36b), or a regular NP can raise to the subject position (36a). In contrast, *try* does assign a semantic role to its subject position and it also requires that the subject of its embedded nonfinite clause complement be coreferent with its own subject. Thus, *try* subcategorizes only for a $CP_{[-fin]}$

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[3] These distinctions seem to apply cross-linguistically in that predicates meaning *seem* or *likely* will not assign a semantic role to their subject position in any language. Whether they raise the lower clause subject to the main clause depends on the syntax of the particular language, however. Similarly, predicates with the same meaning as *try* will assign a semantic role to their subject position and require that the subject of the embedded clause be coreferent with the main clause subject. Depending upon the binding conditions of the language, however, the coreferent subject may or may not be *PRO*. For example, the VSO language, Quiegolani Zapotec, simply allows the main clause subject to be missing in 'raising' constructions and overtly repeats the coreferent subject in 'equi' constructions (Black 1994:Ch. 4-5).

that is headed by the null C (as in tree (34)), so the coindexed *PRO* will always be the subject of the embedded clause.[4]

Two other main types of predicates should be mentioned. These were known in Transformational Grammar as Object-Subject Equi and Subject-to-Object Raising. Here it is important to distinguish whether or not the main predicate assigns a semantic role to the NP following it. The dummy *there* and idiom chunk tests can be applied again, as well as checking whether passive in the embedded clause yields a synonymous result.

(38) a. Sue persuaded Bill to fix the sink.
b. ?Sue persuaded the sink to be fixed by Bill.
c. *Sue persuaded there to be no solution to her dilemma.
d. ?Sue persuaded the roof to cave in.

(39) a. Sue expected Bill to fix the sink.
b. Sue expected the sink to be fixed by Bill.
c. Sue expected there to be no solution to her dilemma.
d. Sue expected the roof to cave in.

It should be clear from (38) that *persuade* does assign a semantic role to the NP following it, so it subcategorizes for both an NP and a $CP_{[-fin]}$ headed by the null C, which will have a *PRO* subject that is coindexed with the object of the main clause. The tree for (38a) is given in (40).

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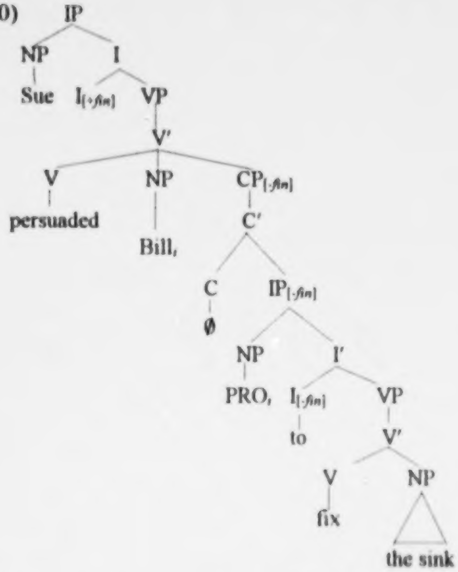
[4] Note that in both raising and equi constructions, apparent long-distance binding of reflexives is allowed:

(i) Bill seems to like himself.

(ii) Bill tries to humble himself.

This is because either the coindexed trace or the coindexed *PRO* acts as the antecedent for the reflexive within the lower IP, which is the governing category.

(40)

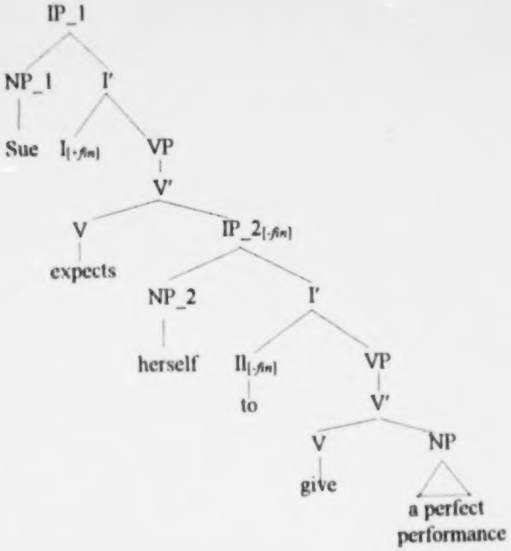

IP
NP
I
Sue
I[+fin]
VP
V'
V
NP
CP[-fin]
persuaded
Bill,
C'
C
IP[-fin]
∅
NP
I'
PRO,
I[-fin]
VP
to
V'
V
NP
fix
the sink

In contrast, the examples in (39) show that *expect* does not assign a semantic role to the NP following it, which would lead us to believe that *expect* simply subcategorizes for an $IP_{[-fin]}$ complement. Data such as (41) led to the Transformational Grammar proposal that the subject of the lower clause subsequently moves to the object position in the main clause.

(41) Sue expects herself to give a perfect performance.

Movement to a complement position is not allowed in GB, since the complement position can only exist if it is subcategorized for, and therefore filled, at D-structure. Instead, Principle A of the Binding Theory and the Case Filter can be met without movement, as shown in the D-structure tree for (41) given in (42).

(42)



In this tree structure, the NP_2 *herself* is governed by the verb *expects* (since IP is excluded from blocking government by clause (c) of the definition). Further, *expects* is not a passive form and it does assign a semantic role to its external argument (subject), so it can assign accusative case to NP_2 (e.g., *Sue expects me to give a perfect performance*), allowing it to pass the Case Filter. Finally, NP_2 can act as if it is part of the main IP_1 for the Principles of Binding Theory: since its governor is above IP_2, the governing category in which the coindexed antecedent for NP_2 must be found is IP_1, legalizing the reflexive in NP_2.

This concludes our introduction to most of GB theory as developed through 1986.[5] The next and final article in this series will cover more recent developments in the theory, many of which were necessary due to consideration of other languages, especially non-Indo-European languages.

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[5] In *Barriers* (Chomsky 1986), Chomsky reformulates the definition of government in terms of barriers. Discussion of barriers, subjacency, bounding theory, and the Empty Category Principle has been omitted from this introductory series. The reader is referred to the original sources or to textbooks (such as Haegeman1994) for more information.

REFERENCES

Barker, Chris and Geoffrey K. Pullum. 1990. A theory of command relations. Linguistics and Philosophy 13:1-34.

Black, Cheryl A. 1994. Quiegolani Zapotec syntax. Ph.D. Dissertation. Santa Cruz: University of California.

Chomsky, Noam. 1981. Lectures on Government and Binding. Dordrecht: Foris.

_________. 1982. Some concepts and consequences of the theory of Government and Binding. Chicago: MIT Press.

_________. 1986. Barriers. Chicago: MIT Press.

Haegeman, Liliane. 1994. Introduction to Government and Binding theory, 2nd edition. Cambridge: Basil Blackwell.

Pollard, Carl and Ivan A. Sag. 1994. Head-driven phrase structure grammar. Chicago: The University of Chicago Press.

Reinhart, Tanya. 1976. The syntactic domain of anaphora. Ph.D. Dissertation. Cambridge: MIT.

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Report

LinguaLinks Linguistic Workshop Field-test

Report by CARLA F. RADLOFF
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[Editor's note: The following is an edited version of a fuller report given to the 1997 SIL Eurasia Area Core Task Forum in Horsley's Green, U.K.]

I like working in LinguaLinks! The Linguistic Workshop is available only in the full release of LinguaLinks and requires more processing power and computer memory than the LinguaLinks Libraries require. Ah, but what advantage it brings!

The LinguaLinks Linguistic Workshop is my primary platform for language analysis. It includes data management and analysis tools for semantic and morphological analysis as well as integrated helps and glossaries. I am at the stage in my language project where I write words phonemically with relative confidence. That really helps in analysis, but it's not crucial. The study of any language is an iterative process: as my understanding of the language evolves to a deeper level—it is necessary to update information.

The nice thing about LinguaLinks as my analysis platform is that I can do that updating relatively easily since it is fully integrated. Data is basically entered once; but it is available from a multitude of different aspects of analysis because of this integration—an incomprehensible (to me!) system of esoteric pointers keeps track of the data and integrates it without duplicating it all over the place. So if I need to change the spelling, I change it in one place and the change is reflected everywhere.

The individual wordforms that comprise a sentence in a text that I enter are kept track of by what LinguaLinks calls the Wordform Inventory Editor. This shows the morphological analysis of that wordform and a concordance of all the contexts in which it occurs. I can double click on any of those concorded sentences and presto! I'm pointed right back to the very sentence segment in the very text it originated in. *Integrated* is the word.

These wordforms are broken down into morphemes by me in what LinguaLinks calls the Analysis Editor. The *structured*-ness of LinguaLinks helps me immensely in being consistent in my analysis, in breaking wordforms into morphemes, in labeling parts of speech, etc. As I discover morphemes, the analysis not only shows up in the Interlinearized Text, but the morphemes are also automatically entered into the Lexical Database. I then can work in that Database and develop the definitions of words, easily checking the context, for example, because these morphemes are still linked with the sentences in the text where they originated. Or I can make annotations about noun classes, points to be checked out, historical change, etc. All the different categories of speech or annotation or domain or anything else are then easily analyzable through the Category Viewer or any filter I would want to make. Such a Viewer is also available for the Interlinear Text Editor.

There may be some frustration at this point in the development of these Linguistic Tools, with the so-called 'slowness' of data entry, and all the little windows one must contend with in entry and analysis, but once entered, I have access to that data from a multiplicity of different perspectives. I don't have to take time duplicating entries for other types of analysis.

One of the things I enjoy about working in the Linguistic Tools is that there is so much **more** capability than what I have tapped so far. I am concentrating on **building** my Lexical Database at this point through interlinearizing texts, but soon I will want to focus on filling out that Database into an actual dictionary. I have yet to apply, for example, the facility of automatically linking Thesaurus categories from the Greek Lexicon (Louw and Nida) to my lexical entries, but that capability is there waiting for me! The future practical applications of such linking to transferring concepts across languages are exciting! Then there are the Lexical Relation Set Chooser and Editor, and the tool to Compare Related Senses of words, and so many other tools and instructions and glossaries and explanations that will help me make my dictionary a quality contribution to the knowledge of the language as well as a practical tool for understanding it!

The LinguaLinks Linguistic Tools development team has reportedly set a high priority on bringing integrated Phonology Tools to usable form. They will be able to begin work on this as soon as the next version is out in April. In LinguaLinks version 1.0 a *prototype* phonology tool is included. Dan Hallberg experimented with this tool. Here are some of his comments: 'I liked many of the phonology analysis and display features. I felt it was pretty easy to use and allowed me to look at my data from several useful angles.' He concludes with a plea that the up-coming real phonology tools be integrated with the rest of the data in the Interlinear Text Editor, etc. [Editor's note: LinguaLinks version 1.5 has the capability of saving some of the data displays for Phonology in a form that Microsoft Word can read. It also includes a template to write up phonology results which has been used in some field methods courses.]

Not only are all aspects of LinguaLinks Tools and Libraries chock-a-block with integrated Helps, the LinguaLinks team is wonderful about providing further timely help via e-mail! More consultants are being trained all the time to provide help closer to home. There are workshops to help learn LinguaLinks in Dallas, JAARS and others are being planned for the field.

Last summer I spent much time seeking wisdom before I chose to use LinguaLinks as the platform for my language project. I went into hock to buy a notebook computer that will run LinguaLinks nicely and meet my other computing needs for the foreseeable future, while offering the portability I need for my project. This is now the fourth month of living with this decision—I have no regrets. But I'll stop here... I want to get back to work!

APPENDIX

History of the Eurasia Area LinguaLinks Test Site

At the Eurasia Area Forum in 1995, enthusiasm was generated for an Area 'test site' for LinguaLinks. Persons chosen for such a test site would begin with the Preview (pre-release) version of LinguaLinks and really try to use it and give feedback to the developers. With no small amount of lobbying, two teams in the East Region of WEG were selected: myself and Dan and Calinda Hallberg. At that point I was not quite at the phonemic-script stage of analysis for the language I'm studying, and the Hallbergs were at the earlier stages of language learning for the language they're studying. On advice from Geoffrey Hunt and others, we held off buying the necessary computer until the LinguaLinks Preview Version had arrived. Once that arrived, we promptly purchased a Pentium 100 processor computer with 48MB of RAM and loaded up that Preview version of LinguaLinks. Most appropriately, this was on Valentine's Day 1996.

The idea behind bringing out a *Preview Version* of LinguaLinks, as I understand it, was to enable a wider group of users to try it out than is usually the case when 'beta' versions of programs are distributed. Both the

Hallbergs and I spent concentrated time learning different aspects of the LinguaLinks package—I concentrated more on the linguistic analysis tools and Hallbergs concentrated more on the Libraries of information. We both gave lots of feedback to the developers in Dallas and had the reward of knowing that our efforts and feedback were helpful to them as they prepared for the first release version, Version 1.0. As a result of our feedback they decided to delay the release of Version 1.0, but they assured us that the things we said truly were a help!

Subsequently, I was able to spend almost three weeks in Dallas in the summer of 1996 taking time to learn more about the Linguistic Tools and the functioning of LinguaLinks in general. This was a very positive experience and I could truly appreciate all the further work the development team had done since the Preview Version was released. Then, due to inside information and enormous personal influence (?), we were the proud recipients of the very first user-designated CD containing LinguaLinks Version 1.0 the end of September 1996. We've been using it ever since.

LinguaLinks is obviously a **developing** software. The Preview Version that we cut our teeth on had no context-sensitive helps, no big-picture explanations of what was going on, and quite a few show-stopper bugs! Naturally this led to frustration as we tried to learn to use the Tools and Libraries with only e-mail contact for help. On the other hand, the Release Version 1.0 of LinguaLinks has integrated, context-sensitive helps in just about every part of it. The number of bugs has been greatly reduced. There are quick-helps and overviews to help global learners get the 'big picture'. There are more and better labels in the interlinear text and analysis areas. There is even a manual to help (those who take time to read!) to understand the 'object orientation' of LinguaLinks, how to use the Helps system and the different Tools, etc. Version 1.5 will be better and Version 2.0 will have even more capabilities. Like I said, it is **developing**.

New users would be wise to seek out a workshop or consultant help as they begin to use LinguaLinks. Because it is so all-encompassing, the task of learning to use LinguaLinks could be compared to learning six new computer programs all at once! There is plenty of opportunity for confusion or frustration to develop, especially for those less bold toward computers or with greater constraints on their time. However, 'with a little help from their friends' in getting over the initial learning hurdles, there are great rewards in store for the user!

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Dissertation Abstract

Contact induced language change in Adyghe colloquial language in the Caucasus and in Turkey

(Comparative analysis of Russian and Turkish influence in oral Adyghe texts)

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The North West Caucasian Adyghe language provides ideal conditions for the study of language change because of the sociolinguistic history of its speakers and their contact with typologically and genetically different languages. This study examines the sociocultural and sociolinguistic factors which determine dominance relations in Adyghe-Russian language contact in the Caucasus and Adyghe-Turkish language contact in Turkey in the present century. The analysis is based on text material in the Abdzakh dialect of Adyghe, collected during fieldwork in Turkey (1979-1990) and Adygheya in the Caucasus (1990-1994).

In the comparisons of both contact situations, the focus is on the description of the linguistic features. The kind and extent of interference are dealt with on different levels of the Adyghe language. Lexical interference includes the borrowing of different parts of speech and devices of integration in Adyghe. Structural interference includes changes in Adyghe phonology, morphology, and syntax due to foreign elements (Russian and Turkish, respectively).

After comparisons of the decisive social factors, the main part of the study closes with a tentative prognosis regarding the process of language change in the Abdzakh dialect and the Adyghe language in general in Turkey and the Republic of Adygheya in the Caucasus.

The book consists of eight chapters with an appendix which includes the proposal of a Latin-Turkish-based alphabet for Adyghe and a collection of Abdzakh texts with a German translation.

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Reviews of Books

Word order and constituent structure in German. By HANS USZKOREIT. CSLI Lecture Notes No. 8. Center for the Study of Language and Information. Chicago: University of Chicago Press. 1987.

Reviewed by JEROLD A. EDMONDSON
University of Texas at Arlington

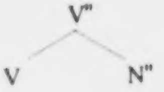
This monograph is a revised version of Uszkoreit's (U) 1984 PhD dissertation submitted to the University of Texas at Austin. The general framework is GPSG (Generalized Phrase Structure Grammar) of the type proposed by Gazdar, Pullum, and Sag 1985, subtype ID/LP (Immediate Dominance/Linear Precedence). The empirical question under study is word order and constituency in Modern German. U is out to persuade us that treating a language with rather free constituent placement and structure within a grammar approach without movement is not the linguistic equivalent of Mission Impossible. Indeed, GPSG must cut the Gordian Knot of variable constituent position despite fixed finite verb position, for these are the quintessential features of Modern German syntax that have preoccupied the field since Bierwisch 1963. U's work has an introduction and seven chapters that outline first the basic facts about German word order and the framework of GPSG. There is then a discussion of the particular structures of German, the main and auxiliary verbs, separable prefixes, verbal complements, and adjuncts. The book closes with an evaluation of the grammar proposed here for German and a brief conclusion.

Generalized Phrase Structure Grammar utilizes phrase structure rules augmented by metarules to produce surface structure forms directly. There are no transformational or other movement rules. In pursuit of ever weaker grammars, GPSG and U opt for constraining the movement component of grammar by eliminating it entirely and thereby remaining completely within the realm of context-free grammar systems, cf. Wall 1972 for definitions of context-free and comparison to other types. In place of movement U uses metarules or rules upon rules that say if a language has a structure X then there is a corresponding structure Y related to X also found in the language; if the active V' exists, then the passive V' exist, as is expressed by the double shafted arrow, $[V', V, N, X] => [V_{[+pas]}, V, X, (P)]$. Here the brackets represent constituents dominated by a common mother node. Thus metarules are the same as saying active structures and passive structure are both in a sense basic but nevertheless related to each other.

Moreover, in the ID/LP version of GPSG there is a separation of the immediate dominance and linear precedence of phrase structure. So instead of phrase markers of the type typical of X' syntax, in which V' -> V N" where N" is an element to the right of V, ID/LP would have two distinct rules, V' -> V, N" [+acc], in which a V' dominates both V and N", but the two nodes V and N" are—as is indicated by the comma—not ordered right to left. A second rule V < N" puts the verb to the left of the N". In a sense the vertical dominance aspects of language are pried apart from the horizontal or left-to-right order features of a language.

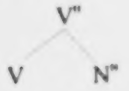
Turning to the grammar organization in more detail, we find that U expresses the immediate dominance as follows:

V" -> V, N" admits into acceptability a subtree
(note that there is no left-to-right order in
the subtree, only immediate dominance)

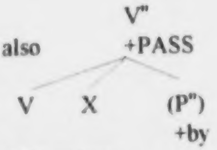


To subtrees are applied Metarules to relate other Immediate Dominance Rules.

If



is admitted, then also



(again there is no left-to-right order)

Then, a second component distributes syntactic features. Default values for features are copied where needed around the trees and some feature mapping conventions (often called feature percolation) apply, e.g. the Head Feature Convention and the Foot Feature Convention. Basically, the idea is that grammatical features are spread from a mother node to its daughters to capture the notion of syntactic dependency between filler and gap. Adding features to V" -> V, N" gives:

V"->	V,	N"
+ACT	+ACT	+OC
+PL	+PL	+SG
+3RD	+3RD	+MASSN

An active V" dominates an active V and N"; the V" is plural; as is the V; V" is third person; as is V; the noun is a mass noun.

The last component imposes a certain linear precedence on constituents, a left-to-right order for rule output. These rules are usually stated as A < B; A precedes B. In English V < N". It is a special feature of this kind of grammar to divide the dominance and linear precedence.

U then goes on to discuss the generative capacity question of ID/LP grammars for German. This discussion is quite technical but basically centers on the question whether the real strength of the GPSG, that is that it remains context-free, is violated by using metarules. Originally it was thought that metarules posed no threat to remaining in context-free territory; that turned out to be too optimistic. Metarules that lead to grammars with an unlimited number of ID rules may not be context-free in general. It is, as it were, the same problem that faced transformationalists years ago—how to find linguistic motivation to keep the grammar from slipping into the maelstrom of Turing Machine-hood and chaos. The bottom line of the discussion is that if a condition called Finite Closure applies to the grammar as a whole, then it can remain in the context-free realm.

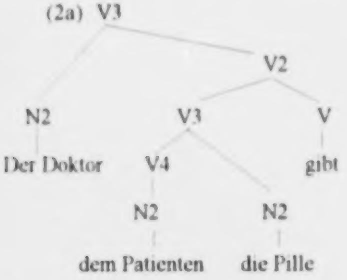
With the ground laid out, U discusses the empirical issue in German. The main verb, for instance, may occur in two locations, as the sentence is a root or dependent clause.

(1) *der Doktor gibt dem Patienten die Pille*
'the doctor is giving the pill to the patient'

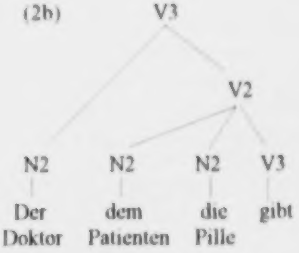
daß der Doktor dem Patienten die Pille gibt
'... that the doctor ... to the patient'

U then asks, does 1 have the structure 2a or 2b?

(2a)



(2b)



After discussion, U decides that there is not 'any convincing evidence for the existence of English-like VP nodes in German clause structure', so he opts for a FLAT clause structure 2b, but simultaneously he argues the auxiliary complex in German is hierarchical, as in English, e.g., *Wird Peter gesehen werden können?* 'Will one be able to see Peter?' would have the structure [wird[[[Peter, gesehen],werden], können]. But for multilevel proposals such as ID/LP there will be no problem with constituent violations.

U then takes up the verb second problem. Drach 1937 first described the itinerant affinities of the German verb in that main clauses have the finite verb in second position whereas most dependent clauses have it last, cf. 1; some subordinate clauses also have the verb second; any major constituent can precede the finite verb in verb second clauses; and finally in questions, the question-marking constituent (Wh-word in English) occupies first position. But, in a flat structure such as 2b, the V can be located by linear precedence alone. As for question-marking constituents, etc., U treats this problem by using an old solution in new guise, namely all first position constituents are treated as fillers for long-distance gaps—the GPSG equivalent of Wh-Movement.

Then comes the chapter on separable prefixes, as in:

(3) a. *Dann* ***schlug*** *er das Buch* ***auf***. 'then he opened the book up'
b. *Dann hat er das Buch* ***aufgeschlagen***. 'then he opened up the book'

In 3 there is little difference in the meaning—preterite vs. perfective form of the verb *aufschlagen* 'to open'—yet in some structures the verb can be either a syntactic/lexical unit or an independent constituent with nearly the same meaning, as in *Er schlug* ***teppich*** (from *teppichschlagen* 'to carpet-beat') vs. *Er schlug* ***Teppich*** (from *Teppich schlagen* 'to beat carpet') 'He beat carpet'. This question is complex. Space prevents me from discussing U's account of vagaries of the variable dependency of separable prefixes in any depth. I summarize only that he finds that prefix-verb combinations are lexical units of which some are fully lexicalized and some are subject to productive rules. The two parts of the verb may not be one syntactic constituent. GPSG, he opines, has good tools for expressing the lexical unity and syntactic non-constituency of the separable prefix phenomenon in German.

Chapter 5 concerns complements and adjuncts. U has developed rules that do not influence the order of the syntactic arguments of the verb and free adjuncts and thus the Linear Precedence Rule produce all six variants of the sentence:

(4) *Dann wird der Doktor dem Patienten die Pille geben*

U notes that there are some exceptions to generalizations of this type. Basically, he formalizes the principles long known in German that FOCUS follows NONFOCUS; the unmarked order is SUBJ, IOBJ, DOBJ; and personal pronouns precede other NP's. He notes that 'it is virtually impossible to find a fragment of data that does not exhibit far more ordering regularities than could possibly be considered …' (121). He offers some insightful examples to show the interplay between pragmatic-phonologically based principles and grammar and finally decides for a set of ordering principles within the Linear Precedence rules:

+NOM < +DAT
+NOM < +ACC
+DAT < + ACC
-FOC < +FOC
+PRN < -PRN

He then attempts to show that as the LP rules are violated there is a gradual increase of unacceptability. He ends the section with a tour de force comparing languages of greater and lesser freedom of word order:

> … free word order languages tend to exhibit a flatter constituent structure than English, fewer Immediate Dominance rules might be needed, but these will have longer (more) symbols on the right hand side (of the arrow). Therefore the smaller number of ID rules will be compensated by the greater complexity of these rules. Languages with free word order have a less complex syntax.

U closes with evaluation of expandability of the grammar. U claims that his grammar of German has many desirable properties. It is small and simple; this grammar has a small metagrammar that defines a large ID rule set. He has tried to imbue it as well with constraints on generative capacity. The demon to exorcise is multiple application of metarules leading to infinite grammars (ID rule sets). He also discusses in brief how the current grammar fragment could be expanded to include many of the standardly discussed features of German syntax: *daß* clause word order, the verb *gefallen*, subjectless verbs, adverbial phrases, expletive *es*, focus raising, and other kinds of topicalization. The verb second phenomena of German are not stated explicitly but derived from other encoding generalizations not specific to German.

U has provided a multitude of insights on word order, constituent structure, linear precedence, and immediate dominance. It is a very good example of drawing sharp but sweeping generalizations from clearly stated bodies of empirical data. U is to be congratulated for making the problem of generative capacity, GPSG, and the intricacies of the phonological, pragmatic, and syntactic interface almost accessible to us weaker-minded.

REFERENCES

Bierwisch, Manfred. 1971. Grammatik des deutschen verbs. Studia grammatica 2. Berlin: Academie Verlag.

Drach, Erich. 1937. Grundgedanken der deutschen Satzlehre. M. Diesterweg: Frankfurt am Main.

Gazdar, Gerald, Geoffrey Pullum, and Ivan Sag. 1985. Generalized phrase structure grammar. Cambridge: Harvard University Press.

Wall, Robert. 1972. Introduction to mathematical linguistics. Englewood Cliffs, NJ: Prentice Hall, Inc.

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The German language and the real world. By PATRICK STEVENSON, ed. Sociolinguistic, cultural, and pragmatic perspectives on contemporary German. Oxford: Clarendon Press. 1995. 406 pp. Cloth $70.00

Reviewed by NEILE A. KIRK*
Department of Germanic Studies and Russian
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This volume gives an excellent overview of the situation of the German language today. The contributions are 'The study of real language: Observing the observers' by Patrick Stevenson, 'To what extent is German an international language?' by Ulrich Ammon, 'Germanness: Language and nation' by Florian Coulmas, 'Norms and reforms: Fixing the form of the language' by Wolfgang Werner Sauer and Helmut Glück, 'Directions of change in contemporary German' by Helmut Glück and Wolfgang Werner Sauer, 'After the wall: Social change and linguistic variation in Berlin' by Helmut Schönfeld and Peter Schoblinski, 'Theories of sociolinguistic variation in the German Context' by Norbert Dittmar, 'Language in intercultural communication' by Martina Rost-Roth, 'Critical linguistics and the study of institutional communication' by Ruth Wodak, 'Political discourse: The language of right and left in Germany' by Siegfried Jäger,

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* I would like to thank members of the Parkville Circle for useful discussions and advice on the final version of this manuscript.

'Evaluation of language use in public discourse: Language attitudes in Austria' by Sylvia Moosmüller, 'Language and gender' by Marlis Hellinger, '*Jugendsprachen*: Speech styles of youth subcultures' by Peter Schoblinski, and 'Language and television' by Werner Holly.

Glück and Sauer give the sentence *Ich hab' viel zu tun, (so) unimäßig* 'I've got a lot to do, university-wise' among their examples of adverbs formed with the ending *-mäßig* '-wise' (p. 100). In his lecture *Hölderlins Hymne 'Andenken'* of the winter semester 1941-1942, Martin Heidegger referred deprecatingly to the use of acronyms and abbreviations like *Uni* for *Universität* as the *Amerikanisierung der Sprache* 'Americanization of the language' (Heidegger 1982:10). Notwithstanding his hostility to its influence on German, Heidegger acknowledges in his lecture *Hölderlins Hymne 'Der Ister'* of the 1942 summer semester that there is a *technisch-praktische Notwendigkeit* 'technical-practical necessity' to learn *die english-amerikanische Sprache* 'the English-American language' (Heidegger 1984:80).

Schönfeld and Schoblinski state that in early 1992 in East Berlin, 'The previously common *Schlächter* 'butcher" had already been replaced by *Fleischer* or *Fleischerei'* (p. 126). In the past, *Schlächter* or its non-umlauted form *Schlachter* has been borrowed into Norwegian as *slakter*, into Swedish as *slaktare*, and into Latvian as *slakteris* (König 1978:197).

Schönfeld and Schoblinski say that 'the archetypal East German word *Broiler* 'roast chicken' has partly given way to 'the West German version *Hähnchen'* (p. 128). They 'are sold under both names, and at one particular East Berlin outlet a sign appeared in 1992 offering *Hähnchen* but accompanied by the following notice: *Hier dürfen Sie noch Broiler sagen* 'you may still say *Broiler* here' (p. 129). This is a particularly interesting example of lexicokinesis: German *Broiler* comes from English via Bulgarian (Carstensen and Busse 1993:176). Similarly, the German noun *die Kombine* has come not directly from English, but instead via Russian, the immediate source word being Russian *kombájn*, which is itself shortened from English 'combine harvester' (Carstensen and Schmude 1994:787). *Kombájn* has also been borrowed into Chinese, in the form *kang-bai-*yin (Zhou 1996 forthcoming).

I commend this book to all those with an interest in the German language of the 1990s in the context of social and political changes taking place in the German-speaking countries.

REFERENCES

Carstensen, B. and U. Busse. 1993. Anglizismen-Wörterbuch: der Einfluß des Englischen auf den deutschen Wortschatz nach 1945 (Band 1). Berlin: Walter de Gruyter.

Carstensen, B. and R. Schmude. 1994. Anglizismen-Wörterbuch: der Einfluß des Englischen auf den deutschen Wortschatz nach 1945 (Band 2). Berlin: Walter de Gruyter.

Heidegger, M. 1982. Gesamtausgabe Band 52. Frankfurt am Main: Vittorio Klostermann.

_________. 1984. Gesamtausgabe Band 53. Frankfurt am Main: Vittorio Klostermann.

König, W. 1978. dtv-Atlas zur deutschen Sprache. München: Deutscher Taschenbuch Verlag.

Zhou, Xiaokang. 1996. Borrowed words in Chinese (forthcoming). *Dhumbadji!* Vol. 2, No. 4.

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The phonology-syntax connection. By SHARON INKELAS and DRAGA ZEC, editors. Chicago: University of Chicago Press. 1990.

Reviewed by PAUL KROEGER
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'What must phonology know about syntax?' This question (which is the title of Matthew Chen's contribution to this volume) has been a topic of considerable interest to theoretical phonologists since at least the 1970's. The answer, according to most theoreticians, is: 'Not much.'

But many examples have been reported of phonological rules which seem to be conditioned by various kinds of syntactic information, including syntactic constituent structure, syntactic categories (parts of speech) and grammatical relations. How can such examples be handled within a 'syntax-free' approach to phonology? The most popular solution at present is based on an appeal to PROSODIC STRUCTURE, a hierarchy of phonological units: segment, syllable, word, phrase, intonation group. The boundaries of the larger prosodic units (phonological phrases and intonation groups) may be at least partly determined by syntactic information, primarily information about constituent boundaries. Phonological rules may then make reference to units of prosodic structure, but not (directly) to any aspect of the syntactic structure itself.

A well-known example of this approach is the work of Nespor and Vogel (1982, 1986), who identified several phonological rules in Italian which must be defined in terms of phonological phrase boundaries. One rule, which they refer to as *raddoppiamento sintatico*, lengthens an initial consonant following a word-final vowel in the same phonological phrase. A second rule lengthens a word-final vowel at the end of a phonological phrase. A third serves to eliminate consecutive stressed syllables in a single phonological phrase, by shifting word-final primary stress to the left when it is immediately followed by a word in the same phonological phrase with primary stress on the initial syllable. Using these three processes to identify phonological phrase boundaries, Nespor and Vogel show that prosodic constituents are systematically related to syntactic structure, but the two are not isomorphic. For example, a simple NP (such as *three floating cranes*) will form a single phonological phrase, whereas a more complex NP (such as *three large ungraceful cranes*) is broken up into three phonological phrases.

The volume under review contains 19 papers presented at a workshop held at Stanford University in May of 1988, dealing with these issues. Most of the contributors support the general prosodic approach to the treatment of apparent syntactic conditioning, but disagree on the details of how prosodic boundaries are determined.

To take a representative example, Jonni Kanerva identifies four different phonological rules in Chichewa, a Bantu language of eastern central Africa, which are sensitive to phonological phrase boundaries:

a. **Penultimate Lengthening**, which lengthens vowels in the penultimate syllable of each phonological phrase;

b. **Tone Retraction**, which shifts the tone of the phrase-final syllable to the preceding mora;

c. **Non-Final Doubling**, which spreads a singly linked High tone to the following syllable provided that that syllable is not part of the phrase-final (disyllabic) foot;

d. **Pre-High Doubling**, which spreads a singly linked High tone to the following syllable provided that that syllable is not the last High tone in the phonological phrase.

Using these four rules to identify phonological phrase boundaries, Kanerva investigates the prosodic structure of the verb phrase (VP) in Chichewa. He finds that contrastive Focus plays an important role in determining phonological phrasing: If any element of the VP bears contrastive Focus, the first phonological phrase will consist of the verb, the focused element, and everything in between; each constituent within the VP which follows the focused element will form a separate phonological phrase. If the VP contains no focused element, the whole VP forms a single phonological phrase.

This means that prosodic structure must be determined not only by syntactic structure but also by pragmatic (discourse) information. At the same time, some kinds of syntactic information are indispensable. For example, the right edge of a VP always forms the end of a phonological phrase, no matter what follows it.

Not all cases of syntactic conditioning can be treated purely in terms of prosodic structure. One famous example is the rule in Hausa which shortens a verb-final long vowel when it immediately precedes a full NP direct object, as in (c) below. This rule fails to apply if the verb is followed by no object (a), a pronominal object (b), or an indirect object (d). This and other problems for the prosodic approach are dealt with in the paper by Bruce Hayes ('Precompiled Phrasal Phonology'), from which the following data is taken (tone marks omitted):

a.	*na: ka:ma:*	I have caught (it).	(no object)
b.	*na: ka:ma: shi*	I have caught it.	(pro. object)
c.	*na: ka:ma ki:fi:*	I have caught a fish.	(full NP object)
d.	*na: ka:ma: wa Mu:sa: ki:fi:*	I have caught Musa a fish.	(object does not directly follow verb)

Hayes' proposal, which has been widely cited, is to treat such cases as grammatically conditioned allomorphy, just as we treat the two allomorphs of the indefinite article in English (*a* vs. *an*). The distribution of these two allomorphs may reflect a productive rule which deleted the /n/ before a consonant in an earlier stage of the language, but in Modern English we would simply say that the two forms occur in complementary environments. Both forms must be listed in the lexical entry for the indefinite article. In the same way, Hayes analyzes the Hausa verb-shortening data by assuming that every transitive verb has two grammatically conditioned allomorphs: the short vowel allomorph appears immediately before a direct object which is not a pronoun, the long vowel allomorph everywhere else. Both forms are present ('precompiled') in the lexical entry of each verb. In other words, the rule of final vowel shortening is not a productive phonological process, but rather a kind of lexical redundancy rule which expresses the regular relationship between the two allomorphs of each verb. (Note that, unlike 'normal' lexical rules, the vowel shortening rule appears to apply across a word boundary.)

An even more famous problem is the pattern of French *liaison*, the emergence of a 'silent' final consonant before a following vowel. *Liaison* is obligatory (i.e., the final consonant is always pronounced if the following word begins with a vowel) in certain syntactic environments, such as between a determiner and the noun which it modifies. It is optional in other environments (e.g. between the verb 'to be' and its complement). It is impossible in other environments (e.g. between the subject and a following verb). Plural nouns and adjectives exhibit *liaison*, while their singular counterparts do not. Verbs which are inflected for person and number agreement exhibit *liaison*, while their uninflected counterparts do not. Moreover, speech style or register has an important effect. Durand (1990) quotes a familiar maxim which states: 'The more elevated the style the more *liaison* occurs.' For example, *liaison* between a verb and its object is rare in colloquial speech but common in elevated speech. Hayes suggests that the *liaison* forms can also be handled as precompiled allomorphs, but does not offer details.

Hayes' proposal is intended to save the prosodic approach by removing a certain class of problematic examples from consideration. A few of the other authors in this volume argue against a purely prosodic, 'syntax-free' approach, insisting that some phonological rules must be able to refer directly to syntactic information of various kinds. These authors include Ellen Kaisse, David Odden, Arnold Zwicky, and Matthew Chen.

Chen, for example, presents tone sandhi data from a number of Chinese languages and dialects. In general, these rules apply across word boundaries within the same phonological phrase. However, Chen shows that a wide variety of syntactic and semantic information can affect the pattern of tone changes. In Xiamen (Hokkien), tone sandhi rules must distinguish between arguments and adjuncts. In the Pingyao dialect of Mandarin, tone sandhi rules treat subject-predicate and verb-object combinations in the same way; all other combinations trigger a different set of changes. In standard Mandarin, tone sandhi can apply across major syntactic constituent boundaries only if there is a close semantic or syntactic relationship between the two adjacent words.

As a descriptivist, I am more impressed by the richness of the interactions between syntax and phonology than by the theoretician's desire for maximal isolation of each component, but the attempt to develop a 'syntax-free' phonology has produced results which are important to every linguist. At the very least, research on prosodic structure has clearly demonstrated the existence of phonological units larger than the word, and the fact that phonological structure must be distinguished from syntactic structure.

This book will be a valuable resource to anyone interested in phrasal phonology (phonology above the word level). The articles are intended for specialists, and so do not always provide as much introductory or background information as most field linguists would like. Some of the articles are quite dense and highly technical, but others are quite readable. In terms of language coverage, most of the examples come from Africa (Bantu in particular), East Asia, and Europe. There is obviously a great need for careful studies of the relationship between syntax and phonology, and of phrasal phonology in general, in other language areas as well.

REFERENCES

Nespor, M. and I. Vogel. 1982. Prosodic domains of external sandhi rules. In The structure of phonological representations (Part I), van der Hulst and Smith, eds. Dordrecht: Foris.

Nespor, M. and I. Vogel. 1986. Prosodic phonology. Dordrecht: Foris.

Durand, J. 1990. Generative and non-linear phonology. London: Longmans.

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Linguistic reconstruction: An introduction to theory and method. By ANTHONY FOX. New York: Oxford University Press. 1995. 389 pp. Cloth $55.00, paperback $18.95.

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Historical and comparative linguistics is not always a popular topic among field linguists. Our focus is synchronic linguistics; our motivation lies in areas of applied linguistics such as literacy, community development, and the production and translation of vernacular literature.

So why read a book on linguistic reconstruction? First of all, because **languages are fun**. Do you remember the thrill you felt in your first linguistics courses as you discovered how language works? In Language X, [b] occurs only intervocalically, and [p] occurs elsewhere, so you posit the phoneme /p/. You had discovered a pattern that operated throughout the language! In the same way, when comparing two or more languages, you can observe that in cognate words Language X has /p/, whereas Language Y has /b/, so you posit the protophoneme *p. It is the same old thrill of discovering patterns but with the added dimension of time.

Second, the Comparative Method is useful not only in theoretical exercises such as reconstructing protolanguages, it is sometimes an aid in analyzing the phonology and grammar of a present-day language. As I became more acquainted with the languages surrounding the language where I was doing field work, I realized that some of my earlier analysis was in error. For instance, I had analyzed *-i* and *-hi* as allomorphs of the same suffix, but a comparison of the surrounding languages showed me that these were distinct suffixes with distinct functions. The historical-comparative mindset is particularly important to field linguists who are using CARLA (Computer Assisted Related Language Adaptation) programs to produce vernacular literature. A historical-comparative analysis will help the linguist to avoid ad hoc solutions and enable him to use the CARLA program efficiently. Languages, like people, have roots, they have heritage, they belong to families. It pays to keep a historical-comparative mindset.

Fox has written a textbook on historical linguistics with two distinctives. First, he focuses on the Comparative Method, which is the meat and potatoes of historical linguistics. Second, he relates the Comparative Method to current topics of interest, e.g. generative phonology, language universals, and linguistic typology.

One does not need to know about historical linguistics to understand this book. Fox assumes his reader is acquainted with the basics of linguistics, but even a novice in historical linguistics can plunge into this book.

Chapter 1, in spite of being entitled 'Introduction', is actually worth reading. By comparing such forms as Latin *pater*, Sanskrit *pita:*, and Old High German *fater*, linguists have reconstructed the Proto Indo-European **pəte:r* 'father'. Does this reconstruction represent an honest-to-goodness word? Was it actually spoken by real people in the past? Or is it merely a formula that represents various relationships within the data? Chapter 1 deals with these issues.

Chapter 2, 'Background to the comparative method', discusses the development of historical linguistics in the nineteenth century. Chapter 3, The comparative method in the Twentieth Century', has a section entitled The comparative method and generative grammar'. In Chapters 4 and 5 entitled 'The comparative method: Basic procedures' and 'Comparative reconstruction of morphology, syntax, and the lexicon', respectively, one finds more of the nuts and bolts of reconstruction.

In Chapter 6 Fox discusses some issues that strike at the very heart of the Comparative Method. The Comparative Method is based on the FAMILY TREE MODEL of language change; i.e., it assumes that a parent language splits neatly into two or more daughter languages, which may in turn split into more languages. But studies in dialect geography have shown that language change is often more accurately described by the WAVE MODEL, i.e., changes begin at a certain location and ripple out from there—sometimes crossing over previously established language or dialect boundaries. The family tree model is based on the premise that a language can have ONLY ONE PARENT, yet we know there are pidgins and creoles which are hybrids of two or more languages. Even in the evolution of normal languages such as English, we find the same processes as we find in pidgins and creoles—only to a lesser degree. Another issue is the UNIFORMITY OF THE PROTOLANGUAGE. The very theory of the Comparative Method demands the uniformity of the parent language, and when historical linguists reconstruct a protolanguage, it is assumed to be uniform and dialect-free. Yet everywhere we look we find that languages have geographical dialects, social dialects, etc. In light of these criticisms you may wonder if the Comparative Method is theoretically sound or if it can yield practical results. Chapter 6 delves further into these issues.

Chapters 7 and 8 tell about Internal Reconstruction. It is well-known that the syntax of dependent and independent clauses is sometimes different. For instance, the verb in the sentence 'Where is the bookstore?' shifts to the end in the sentence in 'Can you tell me where the bookstore is?' These chapters hold insights in this area as well in topics such as allomorphic or morphophonemic variation.

Chapter 9, 'Reconstructing language relationships', discusses the business of establishing the extent of relationships among a group of related languages, i.e. how one reconstructs a family tree. One topic Fox discusses is the controversy surrounding Joseph Greenberg's classification of the native languages of the Americas.

Chapter 10, 'Language typology and linguistic reconstruction', deals with the topic of language universals, typological frameworks such as word order (VSO, SVO or SOV), accusative vs. ergative, and head-marking vs. dependent marking.

Chapter 11, 'Quantitative methods in reconstruction', picks up the discussion of Greenberg's controversial methods begun in Chapter 9. There is also a critical discussion of the topics of lexicostatistics, glottochronology and Swadesh's wordlists.

Chapter 12, 'Reconstruction, culture and society', discusses how one goes about reconstructing the culture of a language group, as well as its protolanguage. What can we learn about the historical homeland of a people group from reconstruction? How does one language come to replace another in a particular geographical area? Fox quotes a description of the Proto-Austronesian lifestyle as reconstructed by a scholar in the field. Impressive! Of the over 20 details mentioned, only a couple did not apply to the Austronesian language group in which I did field work.

A century ago, the science of linguistics was almost entirely concerned with historical linguistics. Now in some MA linguistics programs, historical linguistics is relegated to one required course. Some field linguists get along without it, but those who want the thrill (not to mention the advantage) of seeing language in more than a flat, synchronic framework, should add the historical dimension and see language in 3-D.

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Academic listening: Research perspectives.

By JOHN FLOWERDEW, editor. Cambridge: Cambridge University Press. 1994. Pp. 316. Hardback $47.95, paper $19.95.

Reviewed By CHARLES PECK
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Academic listening is about how L2 (i.e. 2nd language or NNS—non-native speaking) college students understand lectures in English. The students are enrolled in various university and graduate school departments and courses, and the authors here are interested in how well they do in lectures.

Prof. John Flowerdew, University of Hong Kong, is the editor of the book and contributes an introductory chapter, short introductions to the five sections of the book, and a final summary chapter at the end of the book. Most of the papers give rather full reviews of the literature in their area of study which will be helpful to anyone interested in pursuing a study of any of these areas.

The various papers deal with how to test the comprehension of L2 students by looking at their lecture notes, by having them write summaries, and by having them give oral reports to questions about the lecture. There are several good discussions about the advantages and disadvantages of the various ways of testing students. Only two papers deal with the topic of how the lecturers need to be trained in how to organize the lecture, how to use adequate explanation and pauses, etc. Neither paper gives much detail of any program to do so.

The first paper, after the introductory chapter, could have been an important chapter but the results are vitiated by their use of a faulty lecture. The lecturer was talking about how human beings handle the information that is thrown at them. One aspect was how we ignore non-repetitive, out-of-range data, but she used an example where the offending out-of-range data obtruded itself into the focus of both the speaker and the hearer. She mentioned the obviousness of the obviously strange data two or three times, then she switched to the ordinary case where we scarcely notice the strange data and thus ignore it, and only two or three of the brightest students caught the shift.

The failure of the students to see the problem-solution-evaluation structure of the lecture and to see only a problem-solution structure was attributed to the students' preconceived expectations of the structure of a lecture. Had the lecturer used a more appropriate illustration and had used more obvious signposts, the students might have done better.

Also the next paper was trying to test the efficacy of adding signposting and meta-textual comments and additions. Their trouble was that they started with a perfectly good lecture to which they added the helpful material—but the students saw the added material as simply extra padding. Had the experimenters used a less well-structured lecture, their results might have been different.

The comments on the first and second papers (chapters two and three) illustrate the pitfalls and difficulties researchers face when testing for student performance. Both were tricked by the lectures they used for the tests. By and large, we do not have good ways to evaluate lectures and lecturing styles.

Editor John Flowerdew gives a good overview of the book in his introductory chapter and gives a good summary in his concluding chapter. I could not write a better summary than he has already given.

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Ancient Egyptian: A linguistic introduction. By ANTONIO LOPRIENO.
New York: Cambridge University Press. 1995. 322 pp.
Hardback $59.95, paper $19.95

Reviewed by ANDY WARREN
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As a student of Semitic (especially Hebrew) grammar with very little previous knowledge of Ancient Egyptian, I come well within the intended readership of this book. Loprieno aims 'to provide the linguistic audience with an introduction to the historical grammar of Ancient Egyptian' and 'to reach ... Egyptologists interested in linguistic issues, offering a global presentation of the language from a structural as well as historical point of view'. He describes his own book as 'a historical grammar of Egyptian within the theoretical models provided by the recent tendencies in Egyptological linguistics', general linguistics influences including Comrie, Dik, Givón, Halliday, and Lyons.

Ancient Egyptian 'remained in productive written use ... from about 3000 BCE to the Middle Ages', making it 'one of the oldest and longest documented languages of mankind'. We therefore find a wide range of interesting features at the diachronic level, such as sound shifts, grammaticalizations, syntactization and changes in word order, and morphology (VSO-synthetic structures become SVO-analytic constructions). There are particular limits with Egyptian, though, due to the idiosyncratic writing system (hieroglyphics), the lack of vowels, and a certain autonomy with relation to other Afroasiatic languages (particularly in the verbal system with its two suffix conjugations).

At many points Loprieno interacts forcefully from his textlinguistic stance with Polotsky's 'Standard theory', which has restricted Egyptian linguistics in the same way as the traditional Arabic distinction between Nominal and Verbal Clauses according to initial clause constituent (whether Noun or Verb Phrase) has bound Semitic linguistics. This theory resulted in improbably high numbers of adverbial and subordinate clauses against improbably low numbers of verbal and main clauses, and failed to account for pragmatic topicalization. Hebraists will be aware of the importance of this issue for the textlinguistic interpretation of verbal conjugations.

A very helpful three-tiered model for clausal relations is used: Parataxis-Hypotaxis-Subordination, where 'Hypotaxis' refers to semantic dependency and 'Subordination' to syntactic dependency. When subordination is unmarked, it is termed Embedding.

What I found most interesting for my own work on Hebrew grammar were the historical developments in patterns of negation, Egyptian eventually attaching NEG to verbs ('negative verbs'), complement infinitives ('not to hear'), conjunctions ('that not') and even relative pronouns ('who/which not'—'functionally equivalent to a positive relative pronoun controlling a negative predication').

The book has core chapters on Graphemics, Phonology, Morphology, then Nominal, Adverbial and Pseudoverbal, and Verbal Syntax. Each chapter is divided into two main historical phases of the language, with negated patterns discussed together with their respective positive equivalents.

The Introduction begins with a very clear and concise characterization of the Afroasiatic (i.e. Hamito-Semitic) language phylum, which includes Egyptian, Semitic, Berber, Cushitic, Chadic, and Omotic. Then the history of Egyptian is traced through (a) Old Egyptian, Middle/Classical Egyptian, and Late Middle Egyptian (3000-1300 BC); and (b) Late Egyptian, Demotic, and Coptic (1300 BC-AD 1300). The history of Egyptian linguistics passes from (a) the 'semitocentric' Berlin School (Erman) to (b) the 'eurocentric' Gardiner and Gunn to (c) the 'Standard Theory' of Polotsky to (d) the more discourse and pragmatics-centered approaches of modern scholars such as Loprieno himself.

The Egyptian writing system (chapter 2) cannot fail to fascinate any linguist though few would choose to mimic it! Hieroglyphics, Hieratic, and Demotic writing are clearly illustrated with a brief account of their decipherment and a presentation of the Coptic alphabet. Hieroglyphics were used as phonograms, semagrams ('determinatives'), ideograms, and as an alphabet, and were mostly restricted to monumental use. They co-existed with two manual varieties: Hieratic (2600 BC-3rd century AD) was simply a cursive version of the same system, while Demotic (7th century BC-5th century AD) represents 'a shorthand-like simplification of Hieratic sign-groups'. The system thus remained essentially the same until the arrival of Christianity provoked the shift to a Hellenistic philosophy of writing and the Greek-based Coptic alphabet (2nd-3rd centuries AD).

The Phonology of Egyptian (chapter 3) is discussed diachronically with a clear awareness of the limits imposed on the study by the particular writing system with its lack of vowels. This is of course a very different kind of phonological study to that of a field linguist!

Chapter 4 on Morphology is an easy read for a Hebraist but does show the distinctive deictic system of Egyptian, as well as its sophisticated verbal system—both in terms of Tense-Aspect and Mood (imperative, prospective, subjunctive) functions and co(n)text relations (initial, non-initial, contingent; the term 'co(n)text' is, by the way, Loprieno's combination of 'context' and cotext'). I found the structure here particularly helpful: Tense-Aspect, Mood, Voice, Relative, Non-finite, Negative. In later Egyptian, a development from synthetic to analytic morphological patterns provokes a shift from VSO towards SVO. This may be considered a useful analogy to trends in the historical syntax of Semitic languages..

Nominal Syntax (chapter 5) looks at nominal [+N, -V] and adjectival [+N, +V] predicates in terms of marked and unmarked word order and discovers differences in Tense-Aspect-Mood (TAM) and focus functions. Egyptian also quite distinctively realizes a 'hierarchy of salience' of grammatical persons. Thetics, clefts, possessives, interrogatives, and existentials are discussed with regular reference to TAM.

Adverbial and Pseudoverbal Syntax (chapter 6) looks at the very frequent AP and PP predicates of Egyptian [-N, -V], as well as those originating in a verbal form such as the infinitive or 'stative' ([+N, +V], so carrying TAM values). Discourse issues are brought out clearly here, such as initial vs. non-initial main clauses within the sentence, and embedding.

Verbal Syntax (chapter 7) considers particularly initial vs. non-initial, topicalization, and embedding.

The book is provided with thorough notes, bibliography, and indexes.

As one would expect from this expert in Afroasiatic aspect studies, this is an exemplary application of current textlinguistic thinking to an ancient language and it will certainly inform the work of any Semitist, if only in this respect. Semitists also have a lot to gain on the subjects of word order and clausal relations. The discussions of TAM and negation functions and grammaticalization rate among the main contributions for linguists not concerned with Afroasiatic languages. Loprieno ends with a very provocative brief reference to an issue close to the life of any field linguist—the relation between writing system and cultural ideology.

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Dimensions of register variation: A cross-linguistic comparison. By DOUGLAS BIBER. New York: Cambridge University Press. 1995. 439 pp. Hardback $49.95.

Reviewed by JAMES K. WATTERS
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There is a large body of research that has explored the differences between oral and written modes of language, often taking an approach which assumes a clear distinction between the features of the two. Work in the last decade by Douglas Biber has made a major contribution to the relevant literature, demonstrating, among other things, that the picture is much more complex than it has sometimes been presented.

A typical linguistic fieldworker is involved in promoting literature in a language group without a significant literary tradition and often wonders about the differences that apparently arise between oral and written language varieties. Questions also arise regarding the linguistic differences between different kinds of texts, e.g. narrative and exposition. These are a couple of the issues impressively addressed in this book. The book serves as an introduction to quantitative analysis of the linguistic features of texts as well as to qualitative evaluation of the function of such texts within the language community.

Registers, for Biber, refer to 'situationally defined varieties' (7). The kinds of linguistic features that occur in the monologue of a basketball game announcer are very different from what one finds in an academic lecture (even though both are examples of oral language). The literature on register variation often includes impressionistic or anecdotal evidence. Biber presents a quantitative methodology designed to draw on an extensive corpus, and in this book gives examples of its application to four very different language communities.

Some fieldworkers will be overwhelmed by the degree of thoroughness Biber's methodology calls for. Nevertheless, many of Biber's suggestions could no doubt be applied on a less rigorous scale with insightful results.[1]

A basic premise of Biber's approach is that registers can be distinguished by co-occurring linguistic features. This is somewhat similar to the idea (for example) of distinguishing discourse genres by the verb tense in the main clauses. However, an important feature here is the emphasis on co-occurring features rather than on a few isolated ones. As Biber acknowledges, this is an idea that some researchers have emphasized for a long time (throughout the book Biber provides good summary reviews of the relevant literature). However, he applies it with a rigorously quantitative approach.

This book presents the application of the methodology to English, Korean, Nukulaelae Tuvaluan (Central Pacific), and Somali.[2] Biber discusses issues regarding the size and variety of a sufficient corpus, choosing and tagging linguistic features (vocabulary and constructions), the statistical analysis of tagged linguistic features in texts, the use of factor analysis to find co-occurring features, establishing distinct dimensions of variation, and how these dimensions relate to the varieties of register within a language. It is this mapping of co-occurring linguistic features onto language use and function that defines distinct registers in the book.

One of the questions that immediately comes to mind in considering such an approach is the following: How can we talk about sets of co-occurring linguistic features as characterizing entire registers when we all know that many texts display the interweaving of a variety of 'text types'? Biber addresses this issue—along with others—in his discussion of sampling from a corpus. He demonstrates that registers can be distinguished on the basis of statistically significant co-occurrence patterns of features matched with the native-speaker perception of distinct registers.

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[1] The degree of text analysis and use of statistical methods that are required will, no doubt, be less and less foreboding as more and more computer applications become available to the average fieldworker.

[2] In the late '80s and early '90s doctoral dissertations dealing with issues of register were completed at the University of Southern California by researchers (and colleagues of Biber) in each of the last three languages. Biber's study is made possible by their work and collaboration.

A key issue here is the mapping of form to function. Biber makes explicit that 'it is **not** the case that a single communicative function is assumed to underlie each grouping of co-occurring features', nor is there 'a single communicative function associated with each linguistic feature. Rather, in many cases, features can have somewhat differing functions in different kinds of texts' (135). Although it is not simply one-to-one, there is a form-function mapping in that linguistic features 'serve some discourse task or reflect situational or production circumstances' (137).

For example, one of six dimensions presented for English is that of 'involved versus informational production'. The data show 23 features that co-occur with 'involved production' (including 'private verbs' -- **think**, **feel**, etc.—**that** deletion, contractions, present tense, first and second person pronouns, etc.) and nine features that have a negative correlation including high noun frequency and greater word length. Some of these features also display significant correlations along other dimensions. While this dimension somewhat reflects the difference between written and spoken language, there is also considerable overlap among spoken and written registers. Personal letters have a large positive score, and the fictional registers plus professional letters have intermediate scores, even though these are all written registers. Conversely, prepared speeches and broadcasts are spoken registers with intermediate scores (151).

Some of the findings presented have been reported in previous publications, but this book adds to those and brings them all together to make some fascinating cross-linguistic comparisons.

Of the four languages covered, Tuvaluan is the most distinct in analysis of register types—probably due to its shorter written literary tradition: 'Nearly all registers can be considered interpersonal in some sense. There are only two written registers: personal letters and sermons' (169). It thus illustrates Biber's point that 'we need studies of additional languages from all stages of literacy development, including languages with an extensive repertoire of written registers, languages with minimally developed written traditions, and languages with no written registers at all' (360).

Korean, with a long and complex literary tradition, and its 'range of spoken and written registers' is similar to that in English even though the history and cultures of the two language communities are so different (181). A cluster of co-occurring features characterize a dimension in Korean that is not found in the English data: that of honorific speech (204).

Somali presents yet another picture: 'Although Somali has only a very short history of literacy, it has a wide synchronic range of spoken and written registers' (205).

Such studies have interesting implications for discourse, literacy, and translation. Biber discusses the issue of what kinds of texts and what genres or types can be legitimately distinguished in language:

> ... numerous studies have described discourse characteristics of 'narrative' or 'exposition'—but the typologies of both English and Somali show that there is no single narrative or expository type. Rather, there are multiple narrative types and multiple expository types in both languages; these have different linguistic and communicative characteristics, and each deserves study on its own terms (356).

The kind of careful corpus investigation presented here also produces measurable findings regarding the discussion of spoken vs. written language:

> No dimension in any of these languages defines an absolute dichotomy between speech and writing ... However, each language has dimensions closely associated with speech and writing. These dimensions typically isolate spoken registers at one extreme and written registers at the other extreme, with registers from both modes overlapping in the middle (238).

Chapter 8 investigates diachronic patterns of register variation in both English and Somali comparing the divergence between written and spoken forms over time. Remarkably, a similar pattern is found in both communities. From the very beginning of a literary tradition, linguistic correlates of written language differs from those of speech. Then, as time goes on, the distinguishing features increase still more. (In English, this second stage occurred during the 17th and 18th centuries.) Finally, in the third stage, some types of written texts begin to reflect more the features of speech (popular writing), while others become even more stylistically distinct (technical writing).

The implications for the translation of texts are significant as well. Such research makes it abundantly clear that similar linguistic constructions may have very different functions across languages. Furthermore, they often have a different distribution across registers. Finally, one must deal with the fact that not all languages have the same inventory of speech registers. However, it is encouraging for the translator to find 'that the cross-linguistic similarities identified here are far stronger than the cross-linguistic differences,' even to the extent that 'parallel registers are indeed more similar cross-linguistically than are disparate registers within a single language' (278,9).

The book is well edited, very readable, and does not assume familiarity with sampling methods in corpus linguistics. It has a detailed table of contents and a helpful index.

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German in head-driven phrase structure grammar. By JOHN NERBONNE, KLAUS NETTER, and CARL POLLARD, editors. CSLI Lecture Notes 46. Stanford: CSLI Publications. 1994. Cloth $57.50, paper $22.25

Reviewed by URSULA WIESEMANN
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Head-Driven Phrase Structure Grammar (HPSG), as the authors explain (p. 1):

> ... has attracted attention not only as a framework for linguistic analysis, but also because of its precise and explicit mathematical basis ... and for its applicability in computational linguistics ... Because the latter two topics had begun to dominate discussion ... we issued a call for papers employing HPSG in the empirical investigation of German linguistic phenomena.

The result is a fascinating collection of papers. This book is not merely an application of a static version HPSG to German—the process involved having the theory reformulated, refined, enlarged—and sometimes simplified.

German is a good language to try it out on—with its complex morphological structures, formally explicit case system, and phrase structures so different from English, the language around which the theory HPSG was predominantly developed. The eleven chapters discuss: verbal complexes (1), adjuncts (2), modal verb constructions (3), partial verb phrase fronting (4) word order (5), argument structure and case (6), passives (7-8), nominal phrases (9), subcategorization in relation to complement inheritance (10), and idioms and support verb constructions (11).

One of the things that fascinates me is the fact that it is possible to develop an apparatus which allows the formulation of such constraints as which verbs demand an accusative complement, which a dative complement, and to a certain extent why. Every time I had tried in the past to subcategorize all the verbs of a certain language according to which case they demand (in the Fillmore tradition) I found it an impossible task. The logical conclusion to me was that such a framework works well to give us a general understanding of how grammatical structures work, but it could not be expected that all data fit.

In this book a wide variety of complexities of German are examined. In every chapter a formalism is proposed which seems to work. Since categorical grammar alone cannot do the subcategorization trick, Dale Gerdemann introduces the notion of inheriting subcategorization, that is—allow 'the subcategorization list of a head to be lexically specified as partially structure-shared with the subcategorization list of one of the complements' (p. 341). For the treatment of 'adjectival passives' Andreas Kathol proposes '… that a lot of the work that has been attributed to lexical rules can be delegated to inheritance in a suitably constructed hierarchy' (p. 238). To get case assignment sorted out, Wolfgang Heinz and Johannes Matiasek introduce a distinction between structural and lexical cases. Such innovations (and there are more) bring us closer to defining the properties of lexical entries quite precisely—perhaps so that a computer can use them to generate grammatically and semantically correct texts—at least to help us formulate 'empirical hypotheses about natural languages' (p. 1).

Another notion examined in this book is the difference between **flat** and **contoured** structures, reminiscent of the old controversy between immediate and string constituents (Longacre 1960). John Nerbonne takes all of chapter 4 to argue that the constituents that follow the finite verb in German in the *Mittelfeld* of a clause are best understood as a **flat** structure (a string) in which all the verbal complements and adjuncts are sisters. This because they can be ambiguously grouped and fronted, that is, occur in the *Vorfeld* preceding the finite verb. The **licensing** conditions for such *Vorfeld* elements he identifies in the subcategorization of finite verbs and their verbal complements (p. 146), thus accounting for what looks like ambiguity—a new argument for an old notion which never became very popular.

HPSG, the book claims, is best learned from Pollard and Sag's book, 'Head-driven phrase structure grammer' (1994, Stanford: CSLI). Readers of the volume under discussion are advised to have studied that text book.

However, I would suggest that the volume under discussion is not so excessively loaded with HPSG jargon, such that familiarity with, for example, such general works as Bickford and Daly's 'Basic grammatical analysis (North Dakota SIL Syllabus, currently being adapted to German by Ursula Pieper), plus the excellent 'Lexikon der Sprachwissenschaft' by Hadumod Busmann (1990, Stuttgart: Alfred Korner Verlag) could enable readers of this volume to adequately understand it.

REFERENCES

Bickford, Albert and John Daly. Basic grammatical analysis. North Dakota SIL Syllabus (ms). Dallas: Summer Institute of Linguistics.

Busmann, Hadumod. 1990. Lexikon der sprachwissenschaft. Stuttgard: Alfred Korner Verlag.

Fillmore, Charles J. 1968. The case for case. Universals in Linguistic Theory, E. Bach and R. T. Harms, eds. New York: Holt, Rinehart and Winston.

Longacre, Robert E. 1960. String constituent analysis. Language 36:1.63-88.

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to the following SIL members recently completing Ph.D. degrees in Linguistics

Dr. Monika Hoehlig (North Eurasia Group)
Technische Universitaet Berlin
Institute of Linguistics, 1997

Dr. Myles Leitch (Congo/Western Zaire Group)
University of British Columbia, 1997
(prematurely announced in NOLx 70)

ERRATA

In the last edition of *Notes on Linguistics (No. 77)* in the review by Ron Moe entitled *The phonology and morphology of Kimatuumbi* by David Odden there are two errors in Table 1 on page 50. The word **n-dano** in the last column is should be two rows lower in the same row as **n-dáno** and **n-danó**: Also **lu-límí** in column eight should have only one acute accent over the last vowel.

In this same publication in the review by Keir Hansford entitled *The emergence and development of SVO patterning in Latin and French* by Brigette L. M. Bauer, please note that on page 44, line 6, the phrase should read: *il aura aimé.*

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Bailey, Charles-James N. 1996. Essays on time-based linguistic analysis. New York: Oxford University Press. 423 pp. Cloth $99.00.

Bailey, Kathleen M. and David Nunan, eds. 1996. Voices from the language classroom. Qualitative research in second language education. New York: Cambridge University Press. 480 pp. Hardback $49.95, paper $23.95.

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Cinque, Guglielmo. 1996. Italian syntax and universal grammar. New York: Cambridge University Press. 332 pp. Hardback $64.95.

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Mutaka, Ngessimo M. 1994. The lexical tonology of Kinande. LINCOM Studies in African Linguistics 01. München: LINCOM EUROPA. 223 pp.

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Sampson, Geoffrey. 1995. English for the computer: The SUSANNE corpus and analytic scheme. New York: Clarendon Press, Oxford. 499 pp. Cloth $90.00.

Schütze, Carson T. 1996. The empirical base of linguistics: Grammaticality judgments and linguistic methodology. Chicago: University of Chicago Press. 253 pp. Cloth $28.95.

Senft, Gunter. 1996. Classificatory particles in Kilivila. Oxford Studies in Anthropological Linguistics. New York: Oxford University Press. 394 pp. Cloth $75.00.

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Wakely, Richard and Henri Béjoint. 1996. French usage: The do's and don'ts of writing and speaking French. New York: Oxford University Press. 220 pp. $7.95.

Womick, Donald L., Sr. 1996. Know yourself syntirpously. [A catalogue of Greek and Latin origins of common English words.] New York: Vantage Press, Inc. 166 pp. Hardcopy $17.95.

Yamada, Haru. 1997. Different games, different rules: Why Americans and Japanese misunderstand each other. New York: Oxford University Press. 166 pp. $24.00 ■

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From the Linguistics Department

The Summer Institute of Linguistics considers it an honor to have the twenty four International Linguistics Advisors named on the inside cover of *Notes on Linguistics* as friends to our organization, lending their counsel in various ways. These are prominent linguists associated with different universities around the world. Many of them have advised SIL members individually and given counsel to the organization's administration. Some have led workshops, taught courses, participated in seminars and interacted in other ways with our SIL field entities and members around the world. They have also edited and refereed manuscripts submitted for publication by SIL members. We greatly appreciate their contribution and friendship. On occasion, *Notes on Linguistics* has published remarks from some of the International Advisors addressed to field linguists and the SIL organization in general.

With this issue we will begin regularly including remarks from SIL's International Linguistics Advisors and Consultants, starting with some below from Rudolph C. Troike. Rudy is Professor of English at the University of Arizona, where he teaches English linguistics and grammar, and a periodic seminar on code-switching. His current research interests include universals of WH-questions, center-embedding in Coahuilteco (an extinct American Indian language of Texas), Chinese syntax and semantic prototypes, and syntactic constraints on code-switching. He has refereed and edited some manuscripts for SIL's Academic Publications Department, and has a book review in this issue of *Notes on Linguistics* (pp. 54-56). He welcomes questions, and may be reached by e-mail at troike@u.arizona.edu

—David Payne

Comments from International Linguistics Advisors

Several years ago I wrote a paper for *Notes on Linguistics* (Number 37, January 1987, pp. 44-51), saying that, to the extent feasible, linguistic data collection should be videotaped. There are several reasons I still consider this to be a useful concept. A great deal of nonverbal concomitant material can be captured this way. Also, people transcribing videotapes are often able to 'hear' the content better when they can see what is happening, especially in natural data collection. (Deictic references to visibly available context can be very frustrating to figure out 'blind'.) A final but very

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important reason is that natural conversational data can best be collected this way. Worldwide, we have a preponderance of individual words and sentences, and of formal texts collected, but we have very little information for most languages on how the languages are used in ordinary everyday interaction. (An example which often arises is pro-drop, which may be rampant in conversation but not in text.) This lacuna is a limitation on our linguistic knowledge which will be made permanent as languages disappear from the scene.

A second suggestion for field linguists concerns collecting developmental language data from children. Few linguists have the longitudinal opportunities that SIL linguists living in villages do, to regularly elicit and record the language of children learning to speak an extraordinary variety of the world's languages. Here again, this is an opportunity which will increasingly disappear as languages themselves disappear, and as SIL linguists finish their work and leave the field. We know precious little about how children outside the 'major' languages learn to compute their structures. So SIL linguists could make a huge contribution to this area, if only by collecting a database (preferably on videotape) for future analysis.

Attention to the language of children learning the language could have two other benefits. Focusing on the period 18 months to 3.5 years could give insights into the analysis of the language itself, as children are trying to do their own analyses. It could also alert the translators to future trends in the directions of change in the language. I have in mind the example of one linguist who investigated a language before World War II, and everywhere recorded /p/, but when his student returned thirty years later, he found everyone under 35 using /f/. Obviously this change had been going on 'underfoot', so to speak, but the first linguist, by ignoring the children, missed the chance to catch this change in progress. It eventually became the norm. Knowing where a language is going can keep a translation from becoming out-of-date before it is printed.

—Rudolph C. Troike

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■

Introduction to Government and Binding theory: More recent additions to the theory

Cheryl A. Black
SIL—Mexico Branch and University of North Dakota

The last six articles of this series have introduced the main tenets of Government and Binding Theory as developed through the mid 1980s (Chomsky 1981, 1982, 1986). After the theory seemed fairly adequate for English, attention shifted to how it would account for other languages. Many other linguists joined in the task of analyzing phenomena not seen in English to determine the coverage of the theory and to propose needed modifications or extensions.

This article will cover some of the additions to the basic GB theory that were proposed in the late 1980s and early 1990s. First, we return to the issue of how VSO or OSV word order can be obtained from a configurational phrase structure. Section 2 then introduces the additional functional projections (besides IP and CP) which have been proposed. Finally, section 3 discusses several ways of dealing with the interaction between morphology and syntax.

1. Phrase structure for languages with VSO/OSV word order. In Article 3 (November 1996), we saw that the phrase structure of all the basic word orders except VSO or OSV can be generated by simply changing the order of the elements on the right side of the two basic X-Bar phrase structure rules:

(1) XP → Specifier X'
X' → X^0 Complements

We are now able to understand the proposals for VSO or OSV word order which allow these languages to have an underlying configurational structure (rather than a flat structure) like the others. The example data is repeated here for reference.

One of the many languages exhibiting VSO word order, Quiegolani Zapotec, an Otomanguean language spoken in Mexico (Regnier 1989, Black 1994), is exemplified in (2)-(4).[1]

---

[1] Abbreviations: C=completive aspect, 3RD=general third person pronoun, 1EX=first person exclusive pronoun.

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(2)

W-eey	*Benit*	*mel.*
C-take	Benito	fish

'Benito took a fish.'

(3)

W-nii	*men disa*	*lo*	*noo*
C-speak	3RD language	face	1EX

'She spoke Zapotec to me.'

(4)

xnaa	*noo*
mother	1EX

'my mother'

Urubú, of the Tupi family in Brazil (Derbyshire and Pullum 1981 from Kakumasu 1976), provides data from one of the very rare OSV languages, shown in (5)-(6).

(5)

Pako	*xuã*	*u'u.*
banana	John	he-ate

'John ate bananas.'

(6)

Koĩ	*sepetu-pe*	*jurukã*	*Nexĩ mãi*	*muji-ta.*
tomorrow	spit-on	ribs	Nexĩ mother	she-will-roast

'Nexĩ's mother will roast the ribs on the spit tomorrow.'

Two main proposals have been made to account for VSO surface order[2] from an underlying configurational structure where the verb and its complements form a constituent distinct from the subject, which is in a specifier position. Each proposal works well for particular VSO languages but makes incorrect predictions for others.[3]

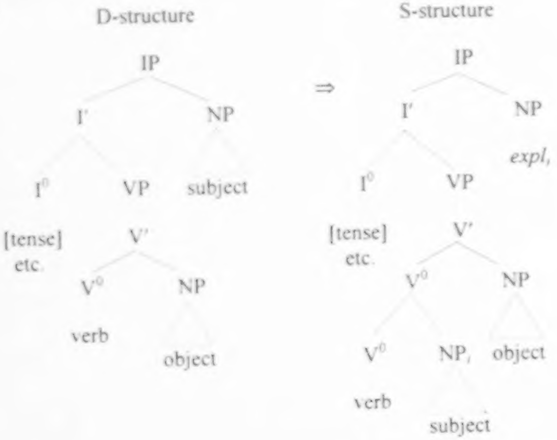
1.1 Subject Adjunction. The Subject Adjunction proposal was developed for Chamorro in Chung (1990) and was originally proposed by Choe (1986) for Berber. An underlying VOS structure is assumed. The surface order is obtained by movement of the subject down to adjoin to the right of the verb, leaving behind a coindexed null expletive.[4] The D- and S-structures under this proposal are shown in (7).

---

[2] OSV order can be obtained by taking the mirror image of either proposal.

[3] For full argumentation, refer to the works cited with each proposal and/or Black (1994:Sections 6.2, 9.3, 11.1).

(7)



Chung argues convincingly that the Subject Adjunction proposal is correct for Chamorro, based upon the unique coordination facts and surface word orders allowed. The Chamorro data cannot be accounted for by the more widely assumed Verb Movement proposal.

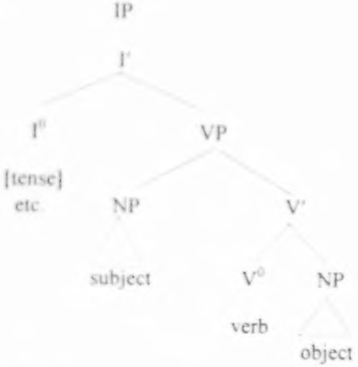
1.2 Verb Movement. This proposal assumes that the surface VSO order is obtained by moving the verb upward from an underlying SVO structure. However, in the current IP structure for sentences where the subject is in the specifier of IP, there is no place for the verb to move. This problem is eliminated if we assume the Internal Subject Hypothesis (Kitagawa 1986, Kuroda 1988, Diesing 1990, Koopman and Sportiche 1991, etc.), which proposes that the subject begins in the specifier of VP in all languages. The

---

[4] The use of this questionable null element rather than a trace is necessary because downward movement is ruled out by the Empty Category Principle (ECP), which basically requires that, in addition to being governed by a proper head governor (including lexical heads and those functional heads allowed by the specific language), a trace must be governed by the moved element that it is coindexed with. Since clause (b) of the definition of government (in Article 6) requires that the governor m-command the category in question, movement downward into another maximal projection is ruled out.

D-structure for both SVO and VSO languages under this hypothesis is shown in (8).

(8)



From this D-structure, the subject is assumed to move to the specifier of IP in order to receive Case (as discussed in Article 5) in an SVO language, whereas VSO word order is obtained by moving the verb up to the I^0 head position (McCloskey 1991, Koopman and Sportiche 1991, etc.).[5] (See (9) on opposite page.)

Black (1994) argues for the Verb Movement proposal as the correct one for obtaining VSO order in Quiegolani Zapotec, based upon evidence for movement of the verb in negation constructions, the distribution of coordination in the language, and the structure of the complements of motion auxiliaries. (10) gives the trees for sentence (2), where I^0 is filled by the aspect marker since there is no tense or agreement marking in the language. We will see in section (3) that the dependent status of the aspect markers can be seen as part of the motivation for the verb movement.

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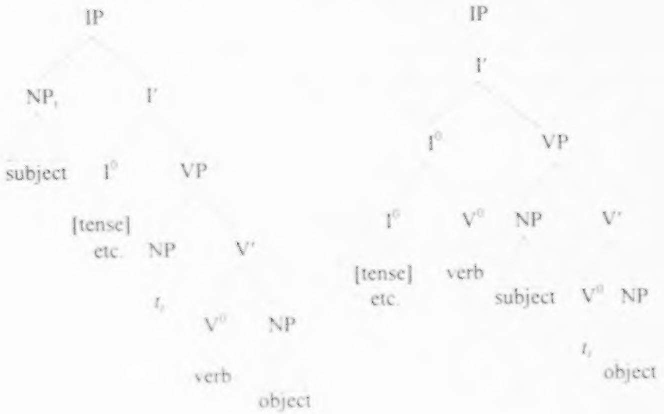
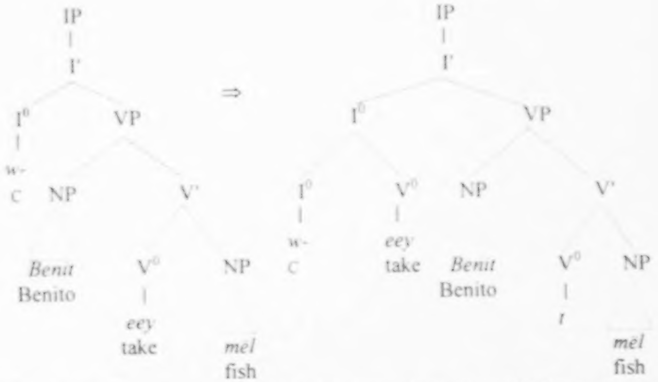
[5] The subject must be assigned Case by either the trace of the moved verb or by the Verb-Infl complex in VSO languages.

(9) SVO S-structure versus VSO S-structure


IP
NP$_i$
I'
subject
I^0
VP
[tense]
etc.
NP
V'
t_i
V^0
NP
verb
object
IP
I'
I^0
VP
I^0
V^0
NP
V'
[tense]
etc.
verb
subject
V^0
NP
t_i
object

(10) D-structure S-structure

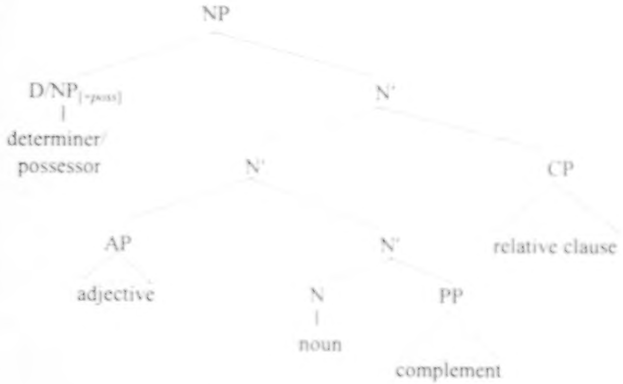

IP
I'
⇒
I^0
VP
w-
C
NP
V'
Benit
Benito
V^0
NP
eey
take
mel
fish
IP
I'
I^0
VP
I^0
V^0
NP
V'
w-
C
eey
take
Benit
Benito
V^0
NP
t
mēl
fish

I won't attempt to draw trees for the Urubú data, since it would be necessary to know more about the language to determine whether Subject Adjunction (with an underlying SOV structure) or Verb Movement (with an underlying OVS structure) is best for it.

2. More Functional Projections. Back in Article 2 (August, 1996) the functional projections IP and CP were introduced so that sentences and clauses would fit into X-Bar theory. A functional projection is a maximal projection headed by a functional (rather than a lexical) head: in the case of IP, the head is either nonfinite *to* or the inflectional features, whereas the complementizer is the head of CP. More functional heads, and therefore projections, were proposed later. We look first at DPs headed by the determiner, which filled out the structure of nominal phrases. Then section 2.2 shows how IP may be broken down further into more functional projections.

2.1 The DP Hypothesis. In the first article in this series (May, 1996) we applied X-bar structure to NPs, where the noun is the head, the determiner or possessor is the specifier, complements are in the expected position, and adjectives and relative clauses are adjoined to N′, as shown in (11).

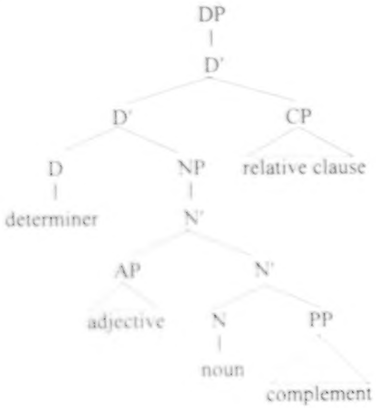
(11)



Abney (1987) and Stowell (1989) propose a different structure based primarily upon the similarities in distribution and meaning between sentences and noun phrases (e.g. *Nero's destruction of the city* and *Nero destroyed the city*) and the fact that determiners and possessors cooccur in many other languages. Their proposal, known as the DP Hypothesis, says that D is the head of a nominal phrase and it takes an NP as its complement. This is seen as parallel to the IP structure of sentences, since the functional head of both DP and IP takes a lexical phrase as its complement.

An unpossessed English nominal phrase would have the DP structure shown in (12), where the determiner fills the head D position, the noun is still the head of NP with its complement as expected, and adjectives and relative clauses are adjoined to one of the intermediate level projections (or to NP). Note that neither DP nor NP has a specifier in this case.[6]

(12)



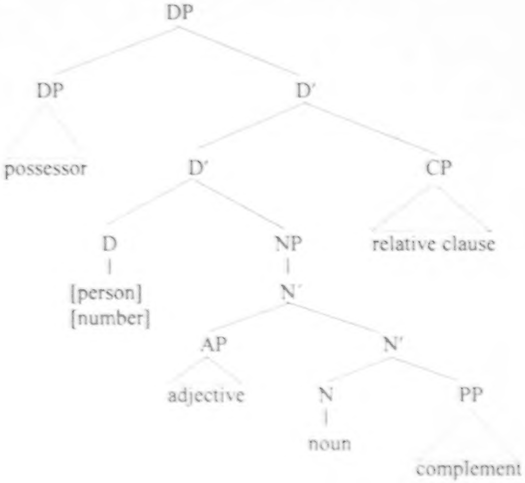
Possessed nominal phrases present more of a problem. The possessor is itself a nominal phrase, so it cannot fill a head position. Therefore, the possessor is seen as filling either the specifier of DP or the specifier of NP, depending upon whether or not the Internal Subject Hypothesis is used for sentences (i.e. the position of the subject of the sentence and the possessor in the nominal phrase should be parallel and Case should be assigned in a parallel way also, if possible). The big question is what fills the head of DP position, since English does not allow an overt determiner in a possessed nominal phrase. Again relying on the similarities between sentences and nominal phrases, as well as the morphological case marking on the possessor in many Ergative-Absolutive languages, it was proposed that agreement features fill D^0 when an overt determiner is not present.[7] The DP structure for English possessed nominal phrases (not assuming the Internal Subject Hypothesis) is shown in (13).

---

[6] The specifier of DP could be filled by certain quantifiers, as in *all the little children of Rwanda who were orphaned*, though in some analyses such quantifiers would have to be adjoined.

[7] Abney (1987) argues that this is similar to I^0 being filled with agreement features only when the nonfinite *to* is not present.

(13)



For English, this change from NP to DP may seem to be mostly theoretical. But in other languages there is more need of the DP Hypothesis to account for all the positions allowed. Since field linguists need to analyze the nominal structure of the language they are studying, the application of the DP Hypothesis to a non-Indo-European language should be the most interesting part.

As an example of how the DP Hypothesis can be used, let's look at data from Quiegolani Zapotec. This language does not have any determiners; instead quantifiers are used. The noun being quantified may also be modified by a demonstrative. In this case the quantifier is first, followed by the noun or pronoun, with the demonstrative last.[8]

(14) *y-ra* *maa* *gin*
P-all 3A this
'all those animals'

Possessors may be embedded, as shown by the bracketing in (15a). The possessor phrase follows the noun, though adjectives may intervene between the noun and the possessor, as shown in (15b). The prefix *x-* 'POS' is required on an alienably possessed noun when it has a possessor.

---

[8] Abbreviations: C=completive aspect, H=habitual aspect, P=potential aspect, 1EX=first person exclusive pronoun; 3A=third person animal pronoun, 3RD=third person general pronoun.

(15) a. *x-yuu* [*x-mig* [*men*]]
POS-house POS-friend 3rd
'their friend's house'

b. *x-peek ngas noo*
POS-dog black 1EX
'my black dog'

A quantifier may cooccur with a possessor.

(16) *y-ra x-kayet Biki*
P-all POS-cracker Virginia
'all Virginia's crackers'

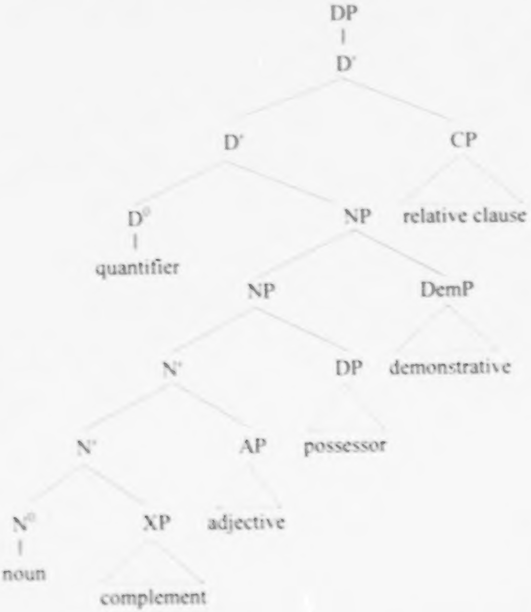
Finally, a nominal phrase may also be modified by a relative clause (shown in brackets).

(17) a. *ndal ngyed gol* [*w-u meez*]
lots chicken old C-eat fox
'lots of old chickens that the fox ate'

b. *te x-mig noo* [*ne r-laan te men*
one POS-friend 1EX that H-want one 3RD
'a friend of mine that wants a person
[*ne r-nii disa*]]
that H-speak language
'that speaks the language'

To account for all these elements and their required orders, I first proposed that the quantifier acts as the head of the DP. Recall that Quiegolani Zapotec is a VSO language, so the fact that both the quantifier and the noun are initial in their phrases is expected. Note, however, that the possessor not only follows the noun but also any modifying adjectives (15b). This means that the nominal structure cannot be fully parallel to the Verb Movement proposal used for the sentence, with the possessor in the specifier-initial position in NP and N moving up to D. Instead, the possessor is analyzed as the specifier of NP in a head-initial but specifier-final configuration, with no movement. The *x*-prefix on an alienably possessed noun when a possessor is present is seen as a type of agreement between the specifier and the head within NP.[9] The full DP structure for nominal phrases in Quiegolani Zapotec, with all the adjoined elements included, is given in (18).

(18)


DP
D'
D'
CP
D⁰
NP
relative clause
quantifier
NP
DemP
N'
DP
demonstrative
N'
AP
possessor
N⁰
XP
adjective
noun
complement

2.2 Splitting Infl into Separate Functional Heads. Pollock (1989) argues that IP must be split into several separate functional projections to account for the differences between French and English, illustrated in the following data (all taken from Pollock 1989).

Look first at the contrasts between English and French with respect to the allowed positions of negation and VP adverbials in finite clauses:

---

[9] Specifier-Head agreement is the preeminent feature-sharing relationship within GB, used for things like subject-verb agreement via the features in I^0 being shared with the subject in the specifier of IP and also for agreement in the [+wh] or [+q] feature between the fronted *wh*-phrase and the $C^0_{[+q]}$ position in questions.

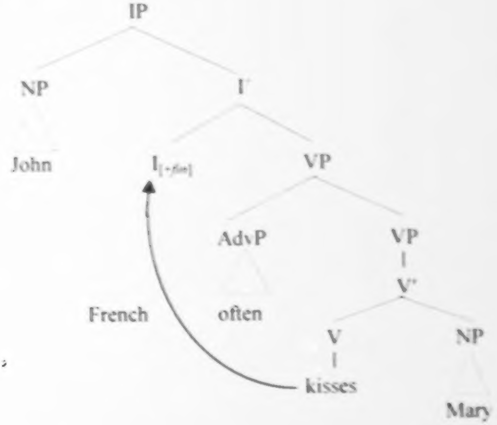
(19) a. *John likes not Mary.
b. *Jean (n') aime pas Marie.*

(20) a. *John kisses often Mary.
b. *Jean embrasse souvent Marie.*
c. John often kisses Mary.
d. **Jean souvent embrasse Marie.*

If we assume that negation is part of Infl and the position of VP adverbials like *often, seldom, hardly* is left-adjoined to VP, and also that both French and English have exactly the same underlying structure, then the differences in the distribution of the data in (19)-(20) can be attributed to verb movement in French.

The D-structure tree for the English sentence (20c) is given in (21), with the arrow indicating how verb movement will account for the corresponding French example (20b).

(21)



The data in (22)-(23) verify that this V-to-I movement occurs only for auxiliaries in English, as discussed earlier in Article 4 (February, 1997).

(22) a. He is not happy.
b. *He seems not happy.

(23) a. He was not arrested.
b. *He got not arrested.

The French verb movement account explains the difference between English and French in finite clauses. Look now at the nonfinite clauses in (24)-(25).

(24) a. Not to seem happy is a prerequisite for writing novels.
b. *Ne pas sembler heureux est une condition pour écrire de romans.*
c. *To seem not happy ...
d. **Ne sembler pas heureux ...*

(25) a. Not to own a car in the suburbs makes life difficult.
b. *Ne pas posséder de voiture en banlieue rend la vie difficile.*
c. *To not own a car ...
d. **Ne posséder pas de voiture ...*

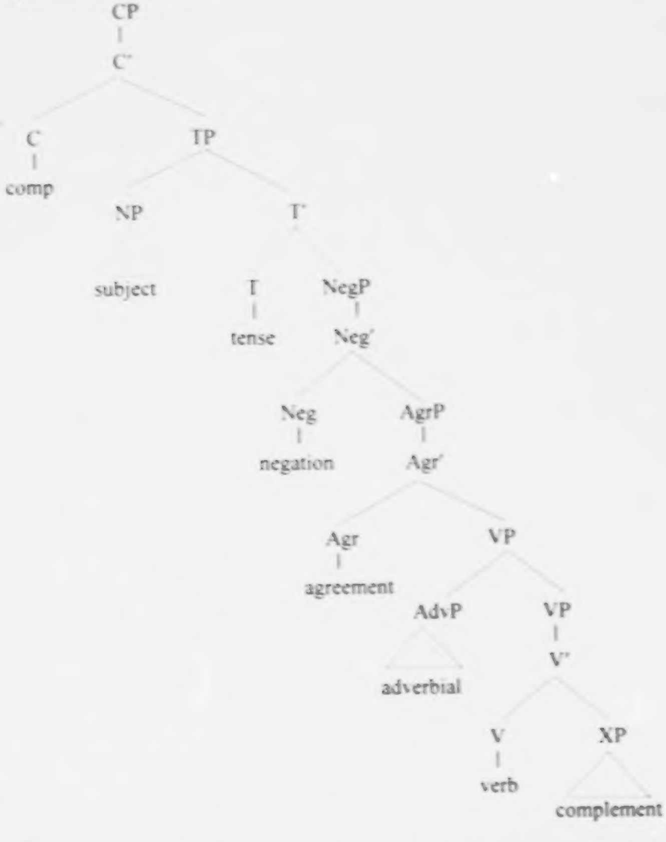
In nonfinite clauses we suddenly have identical distributions for French and English, with French following the English pattern of no movement of the verb to end up in front of the negation. We could get this by simply saying that verb movement only occurs in finite clauses in French.

But then what do we do with (26b and d)? The data in (26) show that the verb may optionally move in front of the adverbial; yet the verb could not move in front of negation in the nonfinite clauses in (24)-(25).

(26) a. *A peine parler l'italien après cinq ans d'étude ...*
hardly to.speak Italian after five years of.study
b. *Parler a peine l'italien après cinq ans d'étude ...*
c. *Souvent paraître triste pendant son voyage de noce ...*
often to.look sad during one's trip of lovers
d. *Paraître souvent triste pendant son voyage de noce ...*

We need both an intermediate position between the adverbial and the negation that the French verb can move to in nonfinite clauses and a position above negation that the French verb must move to finite clauses. Pollock argues that this is evidence for IP to be broken down into further functional projections. He claims that the difference between finite and nonfinite clauses is either the presence of a Tense Phrase (=TP) in finite clauses only, or that movement cannot occur to TP in nonfinite clauses. Negation follows this TP and others have presented evidence that it is a full projection itself (=NegP). Then comes an Agreement Phrase (=AgrP) and finally the VP. CP is still above TP for the clause. At S-structure, the subject occupies the specifier of the highest projection below CP in SVO languages. This more articulated clause structure is shown in (27).

(27) Split Infl structure (SVO)


CP
C'
C
comp
TP
NP
subject
T'
T
tense
NegP
Neg'
Neg
negation
AgrP
Agr'
Agr
agreement
VP
AdvP
adverbial
VP
V'
V
verb
XP
complement

Lots of work is still being done to modify this structure. For some languages, both a Subject Agreement phrase (=SAgrP) and an Object Agreement phrase (=OAgrP) have been proposed. Also AspectP, sometimes two NegPs or a NegP and a negative adverbial that adjoins to VP,[10] and projections for

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[10] For example, Zanuttini (1996) claims that the English negative element *n't* is a functional head Neg^0 and the verb raises and adjoins to this negative marker to support it morphologically (see the next section). In contrast, the negative element *not* is simply an

Ergative and Absolutive Case are argued to be needed for particular languages.

This might make one wonder if we can account for morphology via head movement also.

3. The Morphology/Syntax Interface. In the GB account of English presented in this series, we have two rules involving head movement:

a. The highest $V_{[+aux]}$ must move to I^0, and
b. I^0 must move to a $C_{[+q]}$.

In Article 4, we saw that the movement to $C_{[+q]}$ in an embedded question was blocked by the Principle of No Loss of Information, since the $C_{[+q]}$ position is filled by *whether*. This difference between main and embedded clauses is found in many languages, showing that the principle is valid.

But we need to look a little closer. So far, for English, we have seen that movement of the highest auxiliary to I^0 is required when only features such as [person], [number] and [tense] fill the position, but the same movement is blocked if nonfinite *to* occupies I^0. Features allow head movement but words do not. The next section explores the question of what happens to head movement when a bound morpheme, especially an inflectional morpheme, fills the position which is targeted for movement. Section 3.2 then presents a syntactic account of various types of incorporation.

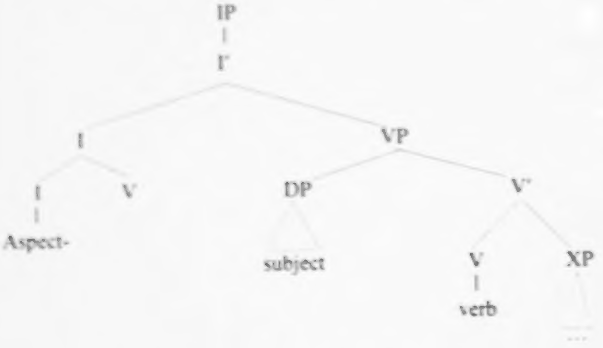
3.1 Head Movement and Inflectional Morphology. In many languages, inflectional morphemes may be isolated from the verb and these morphemes are attached in an order which can be accounted for in the tree structure. This idea that morphological and syntactic derivations must directly reflect each other is known as the Mirror Principle (Baker 1985). In these languages, the Split Infl structure will have a projection above VP and below CP for each inflectional morpheme, with the morphemes closest to the verb having the lowest projections in the tree and proceeding upward in order. The morphemes are in the head position of the projections at D-structure, and head movement of the verb through each projection puts the head together with its morphemes step-by-step up the tree.

---

adverbial element which can be adjoined to (or possibly occur in the specifier position of) any maximal projection.

This is precisely the situation where the question arises of how the Principle of No Loss of Information applies to morphemes. For example, in Quiegolani Zapotec, we need head movement to occur to account for the surface position of the verb, since it is a VSO language. Yet the I^0 position is filled by the aspect marker that shows up on the verb. Rizzi and Roberts (1989) claim that the motivation for the head movement in these cases is that the higher head node (filled by a bound morpheme) contains a slot for the lower head to fill based upon the morphological subcategorization requirements. In other words, at D-structure I^0 is really a complex head containing the aspect marker and a position for the verb to move to, since the aspect marker cannot stand alone. The morphological requirements must be met by S-structure, forcing the head movement to take place.

(28) D-structure for Quiegolani Zapotec



Under this view, at least the inflectional morphology is done in the syntax. In languages where the particular morpheme is not easily separated off or where the order of elements required by the morphology and that required by the syntax do not match (i.e. the Mirror Principle cannot be followed), a checking approach is advocated (Chomsky 1993).[11] The verb can be fully inflected in V^0, and as it moves up, the features on it and the features required by the relevant inflectional heads are checked to be sure they match.

---

[11] This checking approach is used for all languages in the new Minimalist Program (Chomsky 1993, 1995). Some features must be checked by S-structure (or its equivalent point in the derivation), determining how high the verb moves. The remaining features are checked by further movement in LF (Logical Form) prior to semantic interpretation.

3.2 Incorporation. Baker (1988) explores many cases where the grammatical function of a particular word changes, he uniformly analyzes these as syntactic incorporation. Noun Incorporation, Preposition Incorporation, Antipassives, and Causative constructions will be considered here.

A phenomenon where the head noun from the object position is part of the verb exists in some languages, called Noun Incorporation. This is illustrated in (29)-(31) (taken from Baker 1988:77, 81-82).[12] In each example, the non-incorporated version is given first in (a). Normal incorporation of the object is shown in (29b) and (31b), while (30b) and (31c) show that subjects cannot be incorporated.

(29) a. ***Seuan**-ide ti-mũ-ban.* SOUTHERN TIWA
man-SUF 1sS/AO-see-PAST
'I saw the/a man.'

b. *Ti-**seuan**-mũ-ban.*
1sS/AO-man-see-PAST
'I saw the/a man.'

(30) a. ***Hliawra**-de 0-k'ar-hi yede.* SOUTHERN TIWA
lady-SUF A:A-eat-FUT that
'The lady will eat that.'

b. **0-**Hliawra**-k'ar-hi yede.*
A:A-lady-eat-FUT that
(The lady will eat that.)
OK as 'She will eat that lady'

(31) a. *Yao-wir-aʔa ye-nuhweʔ-s ne ka-**nuhs**-aʔ.* MOHAWK
PRE-baby-SUF 3FS/3N-like-ASP the PRE-house-SUF
'The baby likes the house.'

b. *Yao-wir-aʔa ye-**nuhs**-nuhweʔ-s.*
PRE-baby-SUF 3FS/3N-house-like-ASP
'The baby house-likes.'

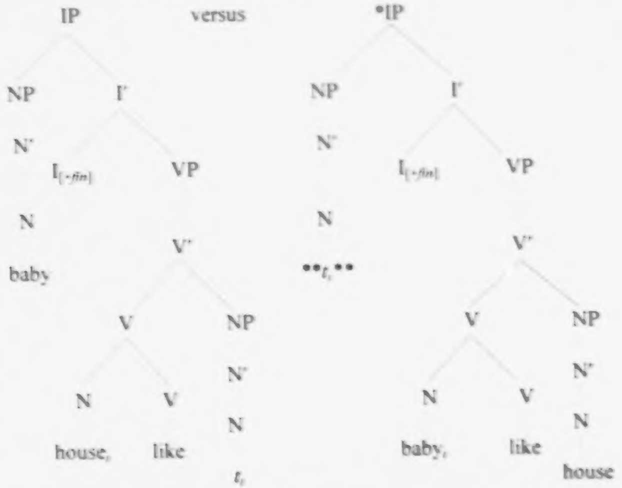
---

[12] Abbreviations: 1sS/AO=first person singular subject or noun class A object; 3FS/3n=third person feminine subject or third person neuter; PRE=nominal inflection prefix; SUF=nominal inflection suffix; A:A=noun class A agreement; ASP=general aspect marker; FUT=future tense.

c. **Ye-wir-nuhwe?-s ne ka-nuhs-a?.*
3FS/3N-baby-like-ASP the PRE-house-SUF
(Baby-likes the house.)

The fact that only objects may incorporate and not subjects is explained by a syntactic derivation where the object moves to adjoin to the verb.[13] It is a strong generalization with all types of movement that objects may move quite freely, while subjects and adjuncts are much more restricted. This is accounted for in GB by the Empty Category Principle, though there has been great debate about the proper formulation needed to account for all the data crosslinguistically. For our purposes here, the relevant restriction is that a trace must be governed by a lexical head. Since the governor of the subject is the functional category $I_{[+fin]}$, a trace would not be legal in subject position, whereas the trace of the object would be governed be the lexical category V. The S-structure trees for the legal and grammatical (31b) versus the ungrammatical (31c) are shown in (32).

(32)



Languages which allow other noun phrase constituents to be stranded when the head noun incorporates into the verb provide strong evidence for the head movement account. Consider the examples in (33)-(34) (taken from Baker 1988:94). In each case, the unincorporated construction is first. In (33b) the quantifier meaning 'two' is stranded and in (34b) the adjective meaning 'beautiful' is left behind when the noun incorporates. (See Baker 1988:93-97 for examples of stranding of other noun phrase constituents.)

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[13] Note that this is an optional movement, not required by morphological subcategorization, so it is simply movement by adjunction at S-structure without the provision of a D-structure slot argued for above by Rizzi and Roberts (1989).

(33) a. [*Wisi* ***seuan****-in*] *bi-mũ-ban.* SOUTHERN TIWA
two man-PL 1sS-see-PAST
'I saw two men.'

b. *Wisi bi-****seuan****-mũ-ban.*
two 1sS:B-man-see-PAST
'I saw two men.'

(34) a. [***Sapannga****-mik kusanartu-mik*] *pi-si-voq.* GREENLANDIC ESKIMO
bead-INSTR beautiful-INSTR 0-get-INDIC/3sS
'He bought a beautiful bead.'

b. *Kusanartu-mik* ***sapangar****-si-voq.*
beautiful-INSTR bead-get-INDIC/3sS
'He bought a beautiful bead.'

It is important to note that not all languages allow incorporation. One key factor to consider is productivity: can you incorporate any object noun into any verb (with few exceptions)? Or does this only occur in fixed forms (e.g. *babysat* in English, or in Quiegolani Zapotec, *put-foot* = 'step'? Fixed forms should be treated simply as lexical compounds.

A crucial fact about a verb with an incorporated object is that the transitive verb cannot take another object; it has seemingly become intransitive or had its valence lowered. The head movement account provides an explanation for this fact, since its regular subcategorization as a transitive verb is met at D-structure before head movement.[14]

The opposite type of effect occurs with Preposition Incorporation, allowed in some languages. For example, in some dialects of Zapotec the comitative preposition meaning 'with' can incorporate into an intransitive motion verb.

---

[14] Incorporation may occur with the subjects of intransitive verbs in some languages, but Baker claims that this is only possible when the verbs are unaccusative and thus the Theme subject began in the object position and could incorporate directly from there rather than raising to the subject position via A-movement. (The analysis of unaccusatives was covered in Article 5.)

This new predicate is now transitive. Using the English translations for illustration, the unincorporated version is given in (35a), followed by the incorporated version in (35b).

(35) a. went John with Mary.
b. went-with John Mary.

The incorporation analysis would use head movement of the preposition to account for this phenomenon. If the process is very limited, it can also be achieved in the lexicon, possibly by a lexical rule. Note that in English 'went with' is an intransitive verb followed by a preposition, but it has the same meaning as 'accompany', which is a transitive verb.

Antipassive constructions, where either the object is not realized at all or it is realized as an oblique argument (like the *by*-phrase in English passives), can also be analyzed as incorporation. A morpheme always occurs on the verb to mark the antipassive construction, as illustrated in (36)-(37) (taken from Baker 1988:129, 131).[15] In (36a) a regular transitive sentence from Greenlandic Eskimo is given. The antipassive construction where the object is demoted to an oblique argument (marked with instrumental case) is shown in (36b), while (36c) gives the impersonal antipassive construction where the object is not realized at all. Tzotzil only allows the unrealized object form of antipassives, shown in (37).

(36) a. *Angut-ip arnaq unatar-paa.* GREENLANDIC ESKIMO
man-ERG woman(ABS) beat-INDIC:3sS/3sO
'The man beat the woman.'

b. *Angut arna-**mik** unata-**a**-voq.*
man(ABS) woman-INSTR beat-APASS-INDIC:3sS
'The man beat a woman.'

---

[15] Abbreviations: ABS=absolutive case, ERG=ergative case, INSTR=instrumental case, APASS=antipassive, INDIC:3sS/3sO=indicative mood with third singular subject and third singular object agreement, INDIC:3sS=indicative mood with third singular subject agreement, ASP=aspect marker, 1sA=first singular absolutive agreement, 3sA=third singular absolutive agreement.

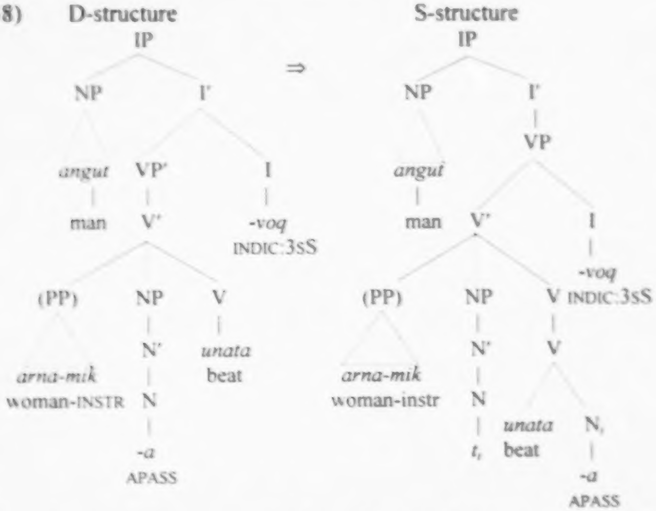
c. *Angut* *unata-**a**-voq.*
man(ABS) beat-APASS-INDIC:3SS
'The man beat someone.'

(37) a. *Muk' bu š-i-mil-**van**.* TZOTZIL
never ASP-1SA-kill-APASS
'I never killed anyone.'

b. *Š-k'ot* *sibatas-**van**-uk-0.*
ASP-come frighten-APASS-uk-3SA
'He came to frighten someone.'

Baker's account of Antipassives is that the antipassive morpheme begins in the object position and then is forced to incorporate into the verb due to its morphologically dependent status. The derivation for (36b or c) is given in (38). Note the SOV clause structure and that V-to-I movement could also occur to account for the verbal morphology.

(38)


D-structure
IP
NP
I'
angut
man
VP'
V'
I
-voq
INDIC:3SS
(PP)
arna-mik
woman-INSTR
NP
N'
N
-a
APASS
V
unata
beat
⇒
S-structure
IP
NP
angut
man
I'
VP
V'
I
-voq
INDIC:3SS
(PP)
arna-mik
woman-instr
NP
N'
N
t_i
V
V
unata
beat
N_i
-a
APASS

Causative constructions can also be analyzed as Incorporation, this time Verb Incorporation. Some English examples of syntactic causative constructions with two independent verbs are given in (39). Chichewa also has syntactic causatives, as shown in (40), but additionally allows parallel morphological causatives, illustrated in (41) (taken from Baker 1988:147-149).

(39) a. Bill made his sister leave before the movie started.
b. The goat made me break my mother's favorite vase.

(40) a. *Mtsikana ana-chit-its-a kuti mtsuko u-gw-e.* CHICHEWA
girl AGR-do-make-ASP that waterpot AGR-fall-ASP
'The girl made the waterpot fall.'

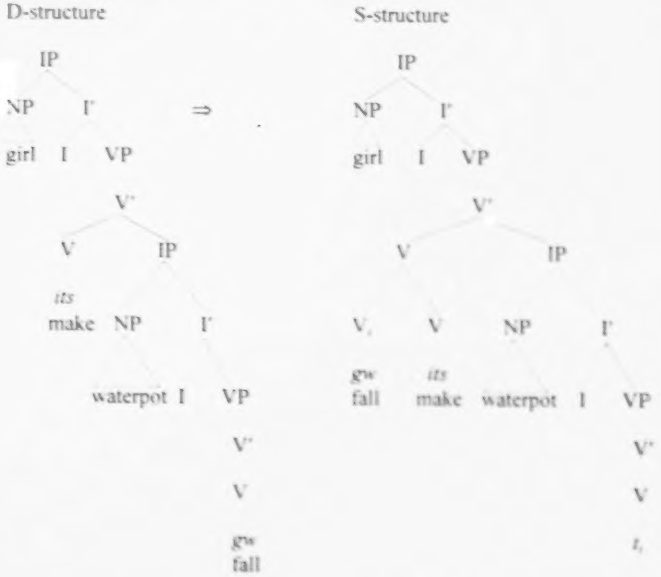
b. *Aphunzitsi athu ana-chit-its-a kuti mbuzi zi-dy-e udzu.*
teachers our AGR-do-make-ASP that goats AGR-eat-ASP grass
'Our teachers made the goats eat the grass.'

(41) a. *Mtsikana anau-gw-ets-a mtsuko.* CHICHEWA
girl AGR-fall-made-ASP waterpot
'The girl made the waterpot fall.'

b. *Catherine ana-kolol-ets-a mwana wake chimanga.*
Catherine AGR-harvest-made-ASP child her corn
'Catherine made her child harvest corn.'

The incorporation analysis of morphological causatives says that they begin with a biclausal structure, just like syntactic causatives, and then have the lower verb incorporate into the higher verb. The tree structures for (41a) are given in (42), where some details are omitted to make clearer how the structure is parallel to that of English syntactic causatives.

(42)


D-structure
IP
NP
I'
girl
I
VP
V'
V
IP
its
make
NP
I'
waterpot
I
VP
V'
V
gw
fall
⇒
S-structure
IP
NP
I'
girl
I
VP
V'
V
IP
V$_i$
V
NP
I'
gw
fall
its
make
waterpot
I
VP
V'
V
t_i

This concludes our introduction to Government and Binding Theory and some of its more recent modifications. It is not meant to be all-inclusive, but

I hope that the readers now have enough understanding to apply the theory to the language they are studying and to read further on their own.[16]

REFERENCES

Abney, Stephen. 1987. The English noun phrase and its sentential aspect. Ph.D. Dissertation. Cambridge: MIT.

Baker, Mark C. 1985. The mirror principle and morphosyntactic explanation. Linguistic Inquiry 16:373-416.

_________. 1988. Incorporation: A theory of grammatical function changing. Chicago: University of Chicago Press.

Black, Cheryl A. 1994. Quiegolani Zapotec syntax. Ph.D. Dissertation. Santa Cruz: University of California.

Choe, Hyon-Sook. 1986. An SVO analysis of VSO languages and parameterization: A study of Berber. ms. MIT.

Chomsky, Noam. 1981. Lectures on Government and Binding. Dordrecht: Foris.

_________. 1982. Some concepts and consequences of the theory of Government and Binding. Cambridge: MIT Press.

_________. 1986. Barriers. Cambridge: MIT Press.

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[16] Some of the key recent developments not covered here include:

(i) Relativized Minimality (Rizzi 1990), which accounts for the differences in grammaticality obtained when an adjunct or a subject versus a complement is extracted from an island, as in (43).

(43) a. ?Which problem$_i$ do you wonder how$_k$ John could solve t_i t_k?

b. *Which student$_i$ do you wonder how$_k$ t_i could solve the problem t_k?

c. *How$_k$ do you wonder which problem$_i$ John could solve t_i t_k?

(ii) The *Wh*-Criterion (May 1985 and Rizzi 1996), which allows for licensing and correct interpretation of *wh*-elements. This was parameterized as to the level at which movement takes place to account for the variation seen in how questions are formed cross-linguistically.

(iii) The new Minimalist Program (Chomsky 1993, 1995), which pares the syntax down to a core set of principles and eliminates some of the levels of the derivation. The functional projections are maintained, but all movement (both overt movement to reach surface word order and covert movement for semantic interpretation) is motivated by the need to check off features.

These developments may seem of little interest to the field linguist, yet I needed to appeal to parts of all three to analyze Quiegolani Zapotec. See Black (1994 Chapter 10 and Appendix) for details.

________. 1993. A minimalist program for linguistic theory. The view from Building 20: Essays in linguistics in honor of Sylvain Bromberger, edited by Kenneth Hale and Samuel Jay Keyser, 1-52. Cambridge: MIT Press.

________. 1995. Bare phrase structure. Government and Binding theory and the Minimalist Program, edited by Gert Webelhuth, 71-132. Oxford: Blackwell.

Chung, Sandra. 1990. VP's and verb movement in Chamorro. Natural Language and Linguistic Theory 8.4:559-620.

Derbyshire, Desmond C. and Geoffrey K. Pullum. 1981. Object-initial languages. International Journal of American Linguistics 47:192-214.

Diesing, Molly. 1990. Verb movement and the subject position in Yiddish. Natural Language and Linguistic Theory 8:41-79.

Kakumasu, J. Y. 1976. Gramática gerativa preliminar da lingua Makusi. Série Linguística 5:171-197. Brasilia: Summer Institute of Linguistics.

Kitagawa, Y. 1986. Subjects in Japanese and English. Ph.D. Dissertation. Amherst: University of Massachusetts.

Koopman, H. and D. Sportiche. 1991. On the position of subjects. The syntax of verb-initial languages, edited by J. McCloskey, 211-258. Lingua, Special Edition.

Kuroda, S. Y. 1988. Whether we agree or not. Lingvisticae Investigationes 12:1-47.

May, Robert. 1985. Logical form: Its structure and derivation. Cambridge: MIT Press.

McCloskey, James. 1991. Clause structure, ellipsis and proper government in Irish. The syntax of verb-initial languages, edited by James McCloskey, 259-302. Lingua, Special edition.

Pollock, Jean-Yves. 1989. Verb movement, UG, and the structure of IP. Linguistic Inquiry 20:365-424.

Regnier, Randy. 1989. Collection of unpublished Quiegolani *Zapotec* glossed texts. Summer Institute of Linguistics, Mexico Branch.

Rizzi, Luigi. 1989. Relativized minimality. Cambridge: MIT Press.

________. 1996. Residual verb second and the Wh-Criterion. Parameters and functional heads: Essays in comparative syntax, edited by Adriana Belletti and Luigi Rizzi, 63-90. New York: Oxford University Press.

Rizzi, Luigi and Ian Roberts. 1989. Complex inversion in French. Probus 1.1:1-30.

Stowell, Tim. 1989. Subjects, specifiers, and X-bar theory. Alternative conceptions of phrase structure, edited by Mark Baltin and Anthony Kroch, 232-262. Chicago: University of Chicago Press.

Zanuttini, Raffaella. 1996. On the relevance of tense for sentential negation. Parameters and functional heads, edited by Adriana Belletti and Luigi Rizzi. Essays in comparative syntax, 181-207. New York: Oxford University Press.

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Dissertation Abstract

A grammar of Lewo, Vanuatu

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The main aim of this study is to describe aspects of Lewo, an Oceanic Austronesian language spoken on the island of Epi, Vanuatu. With this, Lewo becomes one of the few languages of the 40-member Central Vanuatu subgroup to be described. The description begins with background on the geographic, social, and linguistic setting of the Lewo-speaking community.

The phonological inventory and structure of Lewo is given next, then grammar. The approach taken is 'structural-functionalist', whereby grammatical units are described hierarchically, beginning with morpheme and word, then phrase, clause, sentence, and discourse. Traditional structural notions of constituency, contrast, variation and distribution are consistently employed, but at each point, the functional significance of the linguistic units is accommodated. Three contributions of this study are highlighted:

First, the analysis of the structure of Lewo has resulted in the discovery of a hitherto unattested feature in the world's languages and is therefore an important contribution to language typology. The Lewo negative construction is described as a tripartite disjunctive structure. Previously, only bipartite disjunctive structures were known.

A second contribution incorporated in this study is the use of a new word-class label, the Epitememe (coined by Durie and Mushin). This innovation results from the recognition that traditional designations of the word-class Interrogative Pronouns fail to take in account wider generalities that apply to the members of this class and that have cross-linguistic validity.

A third feature of Lewo highlighted in this study is the extremely significant role that verb serialisation plays at different levels of the grammar. Verb serialisation is appealed to as an unified explanation of aspects of structure at the level of verb morphology, clause structure, and interclausal relations. A theoretical contribution of this study is the extended application of Lehmann's generalised typology of clause linkage to serialisation in Lewo.

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Reviews of Books

The languages of the ‘First Nations’: Comparison of Native American languages from an ethnolinguistic perspective. By STEFAN LIEDTKE. LINCOM Handbooks in Linguistics 01. München, Germany: LINCOM EUROPA. 1996. 154 pp. Paper $42.90.

Reviewed by IRVINE DAVIS
SIL—North America Branch

The study of Native American languages has played a key role in the development of scientific linguistics in the United States. Almost from the beginning, questions of the interrelationships of these languages have interested linguists, historians, and anthropologists alike. The present volume gives a good historical overview of trends and developments in the comparative study of Native American languages, especially North American native languages. It is intended as introductory reading for people interested in the topic and is written by a German scholar who has specialized in the study of New World languages including, in particular, Penutian languages.

The author pays special attention to Sapir's (1929) classification of the native languages of North America, and characterizes that classification as a ‘tentative scheme … of great value as a stimulus for further studies’. He also has much to say about the more recent ‘super-groupers’. Both the ‘super-groupers’ and the ‘splitters’ come under criticism—the former for sloppy mass comparisons and the latter for being overcautious and blind to evidence of more inclusive groupings.

Considerable space is given to a discussion of Greenberg's (1987) super grouping in which all Native American languages with the exception of Eskimo-Aleut and Na-Dene are lumped together as ‘Amerindian’. Liedtke criticizes Greenberg's mass comparison procedure and states that ‘the greater part of the lexical material of comparison is completely useless’. At the same time, he considers Greenberg's work on grammatical evidence as ‘brilliant, well-founded and of inestimable value for his line of argument’.

Liedtke recognizes, in general, three kinds of comparisons involving Native American languages: genetic comparisons, areal comparisons, and typological comparisons. A discussion of genetic comparisons occupies the major part of his book. He goes into great detail in examining the foundational ideas of genetic relationships and the factors such as linguistic borrowing, chance similarities, and universals that are apt to skew the results of comparative work.

A great deal of space is given to a critique of lexicostatistics and glottochronology. While recognizing some value in lexicostatistical studies, he rejects the notion basic to glottochronology that the rate of replacement of noncultural lexical items is constant. He gives strong emphasis to the phenomenon of word taboo as a major factor that invalidates glottochronology. He cites cases in certain native cultures in which, when a person dies, it is taboo to speak his name or any other word that is similar to that name.

Swadesh's (1967) hypothesis of a relationship between Tarasco and Quechua is examined in detail. Liedtke concludes that of the cognates proposed by Swadesh only two are acceptable, thus invalidating any time depth conclusions based on glottochronology. At the same time he demonstrates that it is possible to discover a great number of regular correspondences between Tarasco and Quechua which lie outside of Swadesh's data.

One chapter is devoted to a review of studies of areal comparisons, and another shorter chapter to questions of lexical diffusion. Liedtke notes that the concept of the linguistic area has been largely neglected. Ethnologists have focused on culture areas while linguists have been more interested in genetic relationships. The result is that there has not in the past been much attention given to developing a methodical framework for areal studies. He sees the work of Sherzer (1976) as an attempt to compensate for this neglect.

In the first chapter of the book the author traces the development of the idea that languages can be classified on the basis of the complexity of their morphological structure. This has led to schemes such as the four-way isolating : agglutinating : inflecting : incorporating classification. The author's conclusion is that most languages represent a mixture of these types and that this kind of classification is not particularly useful. In the last chapter of the book the author examines more sophisticated attempts at language typology, including Greenberg's (1960) quantitative indices and Sasse's (1988) 'immanent-typological' approach applied to Iroquoian languages. The author feels that the latter approach, if applied to more North American languages, could yield 'extremely interesting insights'.

Liedtke's book can serve as a useful review of what has been done in the field of comparative studies of Native American languages. The bibliography is extensive. The book, however, is somewhat lacking in overall organization with related topics scattered in different parts of the volume. The style of writing suffers at times from what might strike the reader as long convoluted sentences. This may stem from the fact that the author's native language is German and that much of the book is a translation of his earlier writings in the German language. Nevertheless, those interested in comparative studies of North American languages will find this volume interesting and useful.

REFERENCES

Greenberg, Joseph. 1960. A quantitative approach to the morphological typology of languages. IJAL 26:178-94.

__________ 1987. Language in the Americas. California: Stanford University Press.

Swadesh, Morris. 1967. Lexicostatistic classification. Handbook of Middle American Indians, edited by Norman McQuown. Vol. 5, pp. 79-115. University of Texas Press.

Sapir, Edward. 1929. Central and North American languages. Encyclopaedia Britannica 14th edition, 5:138-41.

Sasse, Hans-Jürgen. 1988. Der irokesische Sprachtyp. Zeitschrift für Sprachforschung 7:173-213.

Sherzer, Joel. 1976. An areal-typological study of American Indian languages north of Mexico. Amsterdam: North-Holland Publications.

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System-congruity and the participles of Modern German and Modern English: A study in natural morphology. By ROBERT BLOOMER.

Hamburg: Helmut Buske Verlag. 1994. 123 pp. DM 58.00.

Reviewed by THOMAS DEUSCH
SIL—Chad Branch

'Words, words, words… Be it though madness, yet there is method in it …' (Shakespeare).

Robert Bloomer sets out to discover some method in the world of German and English (strong and irregular) participles. His particular interest lies in polymorphy, i.e. those cases where one participial slot is filled by two or more forms, also referred to as 'lexical split', e.g. *struck* vs. *stricken*. His main question is: What are the factors that inhibit or promote polymorphy?

Chapter 1 introduces the basics and the scope of the study. Bloomer carefully chose two sources to draw data from for each of the two languages involved. For German they are the *Worterbuch der deutschen Gegenwartssprache* (1978-81) and the *Duden Grammatik* (1984). The English verb forms he draws from *The American Heritage Dictionary* (1978) and from Quirk (et al), *A Comprehensive Grammar of the English Language* (1985).

Following Wurzel (1984), Bloomer assumes that 'the inflectional system of a wordtype ... is determined by specific system-defining properties' (p.1). Thus, in Chapter 2 he proposes a 'New Classification of Strong and Irregular Verbs', based on four parameters in the following order: the *-en* ending, the *ge-* prefix, the vowel quality (Ablaut structure, AS), and the consonant cluster (-CS) following the Ablaut.

Thus, for German, 180 strong verbs fall into two formal groups (group I ending in *-en* (166 verbs) and group II ending in *t* (14 verbs)). Each group is then divided into subgroups according to AS, then into subsubgroups according to the -CS quality, with larger (sub)subgroups preceding smaller ones, resulting in a total of 48 subsubgroups.

Here are two examples, the latter of which consists of two isolated forms (i.e. with different -CS), usually grouped under *x* at the end of a subgroup.

I.1.c (*o + ch*)	*gebrochen*	*gekrochen*	*gerochen*	*gesprochen*	*gestochen*
	broken	crept	smelled	spoken	stung
I.8.x (*e + CS*)	*gegeben*	*gelegen*			
	given	lain			

The English verb forms (184 total) fall into three major groups: group I (78 verbs) ending in *-en* (I.A.) or *-n* (I.B.), group II (87 verbs) ending in *-t* (II.A.) or *-d* (II.B.), and group III (all others, 19) verbs. According to the criteria mentioned above, these groups are subdivided into 63 subsubgroups. Again two examples follow:

I.A.1.c.	(*i + t*):	bitten	smitten	written		
I.B.1.b.	(*o: + r*)	born	shorn	sworn	torn	worn

Bloomer's goal with such a detailed classification is: '... to describe the indeterminacies within a system, and perhaps to uncover the conditions under which they arise or do not arise ...', thus 'only a classification based on these indeterminacies will suffice' (p.41).

In Chapters 3 and 4 we find the 'meaty' part of Bloomer's study, which is guided by four expectations, embedded in (1), (2), (4), and (5) below. Here are what could be perceived as the basic observations and results of his work:

(1) Structurally isolated forms show more polymorphy than participles united by (sub)subgroup features.

This is true for the German corpus, as well as for part of the English groups.

(2) Following broader observations in morphology, one would expect that 'The larger the (sub)subgroup, the less polymorphy will occur there.' (p.43).

This expectation is met by the subgroups in the English corpus, but not by the subsubgroups. None of the German data groups meets this expectation.

Bloomer concludes (p. 56):

> Structurally isolated participles are vulnerable to the creation of polymorphy, while structurally attracted participles gain little protection, even in large numbers.

(3) Looking at 'formal cohesion' of the two participle systems in question, there is a higher degree of cohesion in Modern German compared to Modern English.

For clarification, Bloomer develops a rather elaborate procedure whereby each item in the system is compared to all the others, with a specific value of degree of phonetic identity established, based on the same phonetic properties as his classifications. He shows conclusively that, due to historical developments (p.67),

> With a smaller number of common elements, the manner of formation of participles is weaker in English, the system is less cohesive, and participles show a much higher degree of polymorphy. But this is the price English participles must pay for possessing greater autonomy.

This, by the way, is reflected in the stronger presence of polymorphy in the English corpus, with 80 verbs listed, as opposed to 34 cases in German.

(4) Participles in broken subsubgroups will be more susceptible to polymorphy than participles in unbroken subsubgroups.

A subsubgroup is called 'unbroken' if the AS and -CS structure of all the verbs in this subsubgroup follow the same pattern:

biegen - bog - gebogen: to bend - bent - bent
fliegen-flog-geflogen: to fly - flew - flown
wiegen-wog-gewogen: to weigh - weighed - weighed

The just cited subsubgroup is not complete. We also find

lügen-log-gelogen: to lie - lied - lied, or
ziehen-zog-gezogen: to pull - pulled - pulled,

in it, thus it is a 'broken' subsubgroup.

Statement (4) is true for the German data, yet for the English counterpart the result looks rather mixed, i.e. looking at the various larger groups, some of them meet expectation (4), some don't.

(5) The larger the unbroken material subsubgroup, the less polymorphy will occur there.

For both the German and the English corpus, the picture is again not very clear, mainly due to the small size of the subsubgroups, or the lack of unbroken ones.

Bloomer's study of polymorphy in two participle systems is based on a detailed investigation. His presentation is well-structured and well summarized at the end of each chapter as well as at the end of the book (Chapter 5), including a number of appendices (Chapter 6). His use of footnotes is extensive whenever some background to, or philosophical foundation of his approach is mentioned. This keeps the main text straight and to the point.

Bloomer succeeds in establishing certain relations between inherent system-defining properties and polymorphy. If this domain of research was complemented with others, such as the widespread use of English as a mother tongue on different continents vs. the limited use of German, or token frequency (mentioned by Bloomer only in reference to Bloomer 1991), more light might still be shed on the development of polymorphy.

As a field linguist, I am challenged by Bloomer's systematic approach to indeterminacies that call for 'rigorous method'. If I find answers of the same sort to some indeterminacies in my approach to the Chadic language I am investigating, I will be pleased.

REFERENCES

Bloomer, Robert. 1991. The role of token frequency in the polymorphy among the strong and irregular participles of Modern German. *Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung* 44.344-350.

Wurzel, Wolfgang Ulrich. 1984. Flexionsmorphologie und Natürlichkeit. Studia Grammatika 21. Berlin: Zentralinstitut für Sprachwissenschaft.

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Information structure and sentence form: Topic, focus, and the mental representation of discourse referents. Cambridge Studies in Linguistics 71. By KNUD LAMBRECHT. Cambridge: Cambridge University Press. 1994. 404 pp. Cloth $57.95, paper $22.95.

Reviewed by ROBERT A. DOOLEY
SIL—Brazil Branch

Information structure deals with how different sentence elements relate to each other and to their contexts as pieces of incoming information; it also deals with linguistic signals of these relationships. As such, it goes beyond syntax (concerned primarily with form) and semantics (dealing with meaning rather than information status); and it complements discourse analysis (dealing with the organization of larger chunks of text). For those of us who are concerned with effective communication, a basic understanding of information structure is probably the biggest remaining gap in the linguist's bag of tools. And in a translation project, the two linguistic areas where a linguist-consultant's input is most valuable are, in my opinion, information structure and discourse analysis. Such is the importance of this topic.

This book is, to my knowledge, the first full-length, pan-theoretic treatment of information structure since Gundel 1974 (also, interestingly enough, done at UT Austin). In filling this gap, L builds upon earlier work (e.g., by Bolinger, Chafe, Chomsky, Dik, Fillmore, Givón, Halliday, Horn, Jackendoff, Kuno, Ladd, Paul, Prince, Schmerling, Selkirk and the Prague School) and lays solid groundwork for further research and description providing a reference for years to come. I recommend that this book be placed in all field libraries, and that consultants in discourse, syntax, and translation be familiar with it. (The book isn't abstruse, but neither is it always light reading. One way to go about it would be to read relevant chapters in conjunction with actual analysis.)

Anyone who writes in this area enters a terminological jungle. L brings order to it in a useful way, being careful in (re)defining his terms and using them consistently. *He retains terms that are hopefully* still salvageable but the reader needs to be aware of how he uses them: for example, ‘information’ is restricted to propositional information, ‘new’ and ‘old’ are applied only to this propositional information, and ‘topic’ includes not only NP referents but also adverbial ‘scene-setting’ elements.

For information structure, L makes a fundamental three-way distinction: categories of KNOWLEDGE for propositions (assertion vs. presupposition; chapter 2), categories of IDENTIFIABILITY and ACTIVATION for discourse referents (unidentifiable vs. identifiable and inactive vs. accessible vs. active; chapter 3), and categories of PRAGMATIC ROLE or RELATION for elements within a given proposition, notably topic (what a proposition is specifically ‘about’, if anything; chapter 4), and focus (the overall assertion of a proposition minus any presuppositions; chapter 5). These categories are reflected in linguistic structure but not always directly so; in particular, sentences aren't generally segmentable into constituents corresponding to different information-structure categories.

Worth noting in L's approach are claims such as the following:

all sentences (not just ‘special’ ones) have information structure; in fact, all sentences have a focus though not all have a topic;
for a given sentence, the focus and the topic (when one exists) are distinct—information structure can be layered with a focus component having its own internal information structure;
it is common to find vague or homophonous information structures which are compatible with multiple interpretations—the choice generally being resolved contextually;
sentence accent generally signals the establishment of a pragmatic relation;
and the marking of verbal expressions for information structure has lower priority than the marking of nominal expressions.

L also claims that the topic-comment (or predicate-focus) information structure is the unmarked option in the world's languages, and briefly discusses languages in which another configuration is apparently unmarked or there is no apparent unmarked configuration (see Mithun 1987).

L. defines (sentence) topic as 'the thing which the proposition expressed by the sentence is about' (p. 117). This definition has a long history but remains problematic. First, it doesn't cover adverbial 'scene-setting' expressions since they aren't 'things' (referents); perhaps these would best constitute a category distinct from, but related to topics. Second, the definition does not distinguish sentence topic from a discourse topic that happens to occur in the sentence. In the example, 'PETER said it (with sentence accent on PETER), the pronoun *it* is claimed to be expressing a sentence topic, but what makes it any more than a pronoun with a discourse-active referent (hence a likely discourse topic)? Third, since sentence topic is a pragmatic relation, it seems strange not to define it in some relation with focus, the information-structure head of a sentence. Points two and three suggest the need for some additional structural criterion for sentence topics (but one more adequate than earlier ones formulated on the basis of mere grammatical subjecthood or sentence-initial position).

The field linguist in me was disappointed to find that examples are largely from English; ones from French and Italian are only occasional, and rarer still those from German and Japanese (originally the book was to be about spoken French). Data from European, SVO languages predominate. On the other hand, these data are effectively employed to illustrate formal variety while suggesting more general claims. Since data of information structure require subtle judgments of acceptability and appropriate conditions of use (not just of grammaticality), then if L. has largely limited himself to data he personally controls, he has thereby enhanced the reliability of his analysis. While the framework awaits refinement from a broader sampling of languages, it is a well-considered approach which deserves such evaluation.

Although L. speaks of his study as broadly generative, he doesn't cast it in terms of any particular formal theory, nor is he exclusively functional. 'Methodologically, this study is an attempt to combine insights from formal and functional approaches to grammatical analysis' (p. xiv). In fact, L. concludes that interpreting information structure requires structural (paradigmatic) orientation as well as generative (syntagmatic) and functional orientation: to interpret the information structure of a particular sentence, one must not only examine its formal syntax and its functional correspondences but also compare it to the form and function of alternative, semantically equivalent sentences ('allosentences'), interpreting the structure with a view to its place in the overall system.

REFERENCES

Gundel, Jeanette. 1974. The role of topic and comment in linguistic theory. Ph.D. dissertation, University of Texas.

Mithun, Marianne. 1987. Is 'basis word order' universal? Coherence and grounding in discourse, edited by Russell S. Tomlin. *Amsterdam: John Benjamins* 281-328.

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Koiari. By TOM E. DUTTON. Munchen - Newcastle: Lincom Europa [Languages of the world/ Materials 10]. 1996. 77 pp. $33.25

Reviewed by KARL J. FRANKLIN
SIL—Vice President for Academic Affairs, Dallas

Languages of the World is a 'forum for grammatical sketches and language documentations.' This publication on Koiari adds to a list of 20 published titles and almost 100 promised titles. Each volume is between 48 to 80 pages and, as exemplified by the present work, very expensive.

Tom Dutton, a senior linguist at the Australian National University, Research School of Pacific Studies, has published extensively on the languages of southeastern PNG, Pidgin, Hiri Motu, and many other topics. Here we have his sketch of Koiari, the language of his first research efforts.

Koiari is a Papuan (non-Austronesian) language spoken by about 1600 people who live in the foothills of the Owen Stanley Range, inland from Port Moresby. Because of this location Koiari has had contact with Austronesian languages, Motu in particular, for some time. In this sketch Dutton outlines the phonology, morphology, and syntax, concluding with two short glossed texts.

There is a wide range of phonemes in Papuan languages, with Koiari at the simpler end of the spectrum, with but five vowels and thirteen consonants. Stops are not prenasalized, syllables are open, and there are few morphophonemic rules. Word stress is contrastive.

Typologically Koiari is typically Papuan: an SOV word order; a complex verb morphology (primarily suffixes); medial (marked for immediate, subsequent, and iterative sequential actions) and final verbs; serial verbs (determined by phonological, negation, and semantic criteria); a small set of derivational suffixes (which are prefixes in some Papuan languages); nouns that are not marked for gender or number (except that they can be identified by sets of specifiers); a set of direction demonstratives; a small set of conjunctions; discourse connectives that are based on a demonstrative or medial verb suffixes; independent clauses, including two utilizing copula verbs; dependent clauses which are embedded (relative, adverbial, and some complements); relative clauses (externally or internally headed); clause chaining and coordination.

Koiari also differs in certain fundamental respects from TYPICAL Papuan languages: a wide range of suffixes and constructions which occur to mark possessive relations (which is more typical of Austronesian languages); the use of morphemes to mark nonverbal categories in sentences; a full range of specifiers on declarative / question sentences in single or plural forms (alluded to above); posture verbs are not used to mark *to be* clauses or sentences; dual number is not marked in verbs; tense and aspect are not formally distinguished; modals differ from adverbs (they occur only with verbs, lack specifiers, have relatively fixed positions, cannot occur inside the verb, and some combine with each other); there is a fairly lengthy set of postpositions; numerals are based on the numbers ONE and TWO; there are three negatives.

Dutton has encapsulated the essential features of Koiari very well in this study. It would serve as a model for linguistic fieldworkers who wish to provide others with a brief outline of the language they are studying. The only obstacle in having it on your library shelf may be the price.

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Language computations. DIMACS Series in Discrete Mathematics and Theoretical Computer Science, Vol. 17. By ERIC SVEN RISTAD, editor. Boston: American Mathematical Society. 1994. 212 pp. $60.00.

Reviewed by MIKE MAXWELL
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This book consists of 'refereed versions of papers from a workshop held at DIMACS[1], March 20-22, 1992' (pg. xi). The topic of the workshop was that of 'language computations'—that is, the computations that are involved in the comprehension, production, or acquisition of natural languages. In fact, many of the papers diverge from this topic, ranging from the purely linguistic (Burzio's paper on metrical phonology) to the purely mathematical (Li and Vitányi's paper on inductive reasoning). Moreover, the coverage of linguistic subdisciplines is skewed (neither syntax nor semantics is represented while morphology or prosodic phonology is addressed by most of the papers). The skewed coverage of this book may be seen as a point in its favor, since phonology and morphology have been relatively neglected in computational linguistics.

Osamu Fujimura's paper 'C/D model: A computational model of phonetic implementation' examines the mapping from the abstract representation of an utterance in autosegmental phonology to its concrete interpretation by articulatory gestures. His model presumes that at least part of postlexical phonology (allophonic variation, for instance) is actually a matter of phonetic implementation rather than a part of phonology proper. This would imply that phonological features are more abstract than previously believed, and may even be implemented in phonetically different ways in different languages. He also proposes that there is no need for 'segments' (as in traditional phonemes or the root nodes of autosegmental phonology), but that the structure of the syllable directly dominates the phonological feature structure.

András Kornai's contribution, 'Relating phonetic and phonological categories', proposes applying the tools of formal semantics to the mapping between the continuous structures of phonetics (pitch contours and formant bands, for instance) and the discrete structures of phonology (such as a binary or privative feature of voicing). The discussion is at an exceedingly abstract mathematical level.

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[1] The acronym is nowhere explained; apparently it stands for 'DIscrete Mathematics And theoretical Computer Science.'

'General Properties of Stress and Metrical Structure' (Morris Halle and William Idsardi; the paper is partly based on Idsardi's Ph.D. dissertation) will be more accessible to linguists. It presents a theory of prosodic structure in which metrical structure is built on projections of stress-bearing units (as opposed to the idea that metrical structure consists of groupings of syllables, feet etc.). This allows for the possibility that some kinds of syllables will be irrelevant to stress assignment because their nuclei are incapable of bearing stress. The possibilities for prosodic projection and the grouping of the projections into metrical constituents are strictly limited (parameterized) by the theory, accounting for the specific kinds of stress systems found in natural languages and for the ability of children to quickly learn the stress system of the language to which they are exposed.

This latter capability is the focus of B. Elan Dresher's paper, 'Acquiring Stress Systems'. Using examples from a variety of languages, Dresher illustrates how a learning algorithm might discover the parameters of a Halle-and-Idsardi style analysis. Interestingly, he argues for a deterministic learning algorithm on the grounds that determinism makes the learning problem easier. At any given point in the learning process a deterministic learner has only one choice to make (or perhaps a very limited number of choices), whereas a non-deterministic learner must consider all the choices made up to that point.

In 'Metrical Consistency', Luigi Burzio presents a different theory of prosodic phonology based on the grouping of syllables into feet and using constraints in place of rules. Inasmuch as this is quite a different theory from that of Halle and Idsardi, a comparison of the two would have been helpful. Unfortunately there is no reference to other papers in this volume (apart from one brief footnote), a shortcoming that is true of the other papers in this book. One can imagine that there was a lively discussion among the workshop participants; unfortunately, one cannot do much more than imagine. Having said that, I hasten to add that Burzio's paper was for this reviewer one of the most interesting. His claim is that the stress system of English is more predictable than has been realized. This systematization is not without its price in abstractness. For example, his analysis assumes the existence of abstract word-final syllables without nuclei. (A similar proposal but for different reasons was made under the theory of Government Phonology—see Kaye, Lowenstamm, and Vergnaud 1990, and Charette 1991.)

The next two papers in the volume were apparently intended to supplement each other. Li and Vitányi's 'Inductive Reasoning' is a thoroughly mathematical overview of an approach to theory formation based on statistics and the MDL (Minimum Description Length) principle—a metric for deciding among alternative analyses of a data corpus. Rissanen and Ristad's paper, 'Language Acquisition in the MDL Framework', shows how an MDL approach might be applied to a particular linguistic case, that of predictable metrical structure (using Halle and Idsardi's model). In fact Li and Vitányi's approach is scarcely mentioned by Rissanen and Ristad, and then only as a less useful method so that the two papers do not in any real sense supplement each other.

Stephen R. Anderson's contribution, 'Parsing Morphology: "Factoring" Words',[2] examines the problem of parsing words into the underlying forms of the constituent morphemes (as opposed to parsing words into allomorphs), and concludes that it is a difficult problem. Difficult it may be, but not as bad as Anderson claims; there are several ways in which he overstates the problem. For instance, Anderson considers, then rejects, the following approach: first undo the phonology rules to get an underlying representation, then break that representation into a sequence of underlying morphemes. This technique founders, Anderson claims, because (page 176):

> This process does not in general yield a unique result (i.e. the same surface form can have more than one possible underlying source with regard to the phonology), so it is necessary to compile a list of the possible representations that could underlie the given form.

In fact, it is NOT necessary to compile a list of representations; leaving aside some admittedly difficult issues of autosegmental phonology, it suffices to build a regular expression.[3] Anderson does refer to work by Kay and Kaplan (since published as Kaplan and Kay 1994) in which they show how the ordered rules of classical generative phonology can be implemented by Finite State Transducers (which represent regular expressions), but says this (page 177):

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[2] Many of the points made in this paper were made in Anderson (1992).

[3] Regular expressions are a way of encoding certain formal 'languages', and allow the indication of alternatives (X or Y) and optionality (X followed optionally by Y).

> [This approach] simply displaces the real complexity from the time of the computation to the space it occupies. If the interaction between the rules is significant, the size of the resulting transducer grows geometrically . . .

In theory, this geometric growth is a problem—in practice, the issue may not arise[4] because only certain kinds of rule interaction give rise to such growth and these interactions seem to be relatively rare in natural language. In fact, an interesting research question would be whether languages tend to restructure diachronically so as to avoid rule (or constraint) interactions that would cause difficulty for parsing with finite state mechanisms.

Finally, Anderson suggests that nonconcatenative morphology (infixation, for instance) is problematical for parsing, since it makes it impossible to divide a word into a linear sequence of morphemes. This may be, but it does not mean that parsing cannot be done. It simply means that the morphemes which the parse discovers may not be simple constituents of the original string of segments or phonemes; rather—they will be steps in a derivation.

The final paper, 'Complexity of Morpheme Acquisition' by Eric Sven Ristad, also looks at morphology and phonology from a computational perspective, and likewise concludes that it is more difficult than has been recognized.[5] The perspective is explicitly that of autosegmental and metrical phonology which is indeed more difficult than strictly segmental phonology (or classical generative phonology in which segments were treated as an array, or 'bundle', of features). Ristad sketches a proof that under the assumptions of autosegmental phonology, even the problem of generating a surface form from a set of underlying morphemes (which intuitively should be simpler than parsing the surface form into the underlying morphemes) is

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[4] Aside from pathological cases, perhaps. Such cases can arise in syntax: 'Buffalo buffalo buffalo buffalo buffalo' (and even longer sequences) is a grammatical sentence of English, but is nearly incomprehensible to humans as well as being computationally difficult. Whether pathological cases occur in phonology remains to be seen.

[5] There is a statement on page 187 which may cause confusion: 'Given that language users systematically distinguish between possible and actual words, the actual words must be listed in the mental lexicon.' By 'word', Ristad apparently means 'stem', i.e. a stem with derivational but not inflectional affixes (as in Aronoff 1976).

NP-complete.[*] Again, this does not mean that morphological generation in natural languages really is that hard. In all likelihood, natural languages avoid the complexity either by hitherto unrecognized constraints, or by historical changes (i.e. lexicalization) that result in simplifications.

The papers were printed directly from copy provided by the authors, which results in a variety of typefaces. Given the quality of typesetting now available, this is less of a problem than it was several years ago. (A few authors do succumb to the mathematician's temptation of using unusual symbols where more pedestrian ones would suffice.) Typographic errors appear to be few; three references to example (12) on page 104 should refer to example (14). Occasional non-native English creeps in but not objectionably so.

REFERENCES

Anderson, Stephen R. 1992. A-morphous morphology. Cambridge Studies in Linguistics 62. Cambridge: Cambridge University Press.

Aronoff, Mark. 1976. Word formation in generative grammar. Linguistic Inquiry Monograph Series, No. 1. Cambridge: MIT Press.

Charette, Monik. 1991. Conditions on phonological government. Cambridge: Cambridge University Press.

Kaplan, Ronald M., and Martin Kay. 1994. Regular models of phonological rule systems. Computational Linguistics 20:331-378.

Kaye, Jonathan, Jean Lowenstamm, and Jean Roger Vergnaud. 1990. Constituent structure and government in phonology. Phonology 7:193-231.

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[*] 'NP-complete' refers to a class of problems in computation which are believed to be very difficult in the sense that computing a solution may require exponential time. (NP stands for 'Non-deterministic Polynomial time'.)

Aspects of Nepali grammar. Santa Barbara papers in linguistics, Vol. 6. By CAROL GENETTI, ed. Santa Barbara: University of California. 1994. 248 pp. $15.00.

Reviewed by CLIVE MCCLELLAND
SIL—Asia Area

This book has nearly all the characteristics of good research: a good overview of the work, minimal use of elicited data for illustrative examples (and a recognition of the problems inherent in elicited material), reliance on natural data, and a perspective that is relatively theory neutral. It is a good introduction to some current issues in the study and interpretation of the grammatical facts of the major Indo-Aryan language of Nepal. It is noteworthy because of its data-driven and data-oriented discussion.

One feature that I particularly like is that the nine interlinearized texts in the final 81 pages are available on cassette tape (for $3.00), so the interested researcher may peruse the material to confirm conclusions reached by the article writers, as well as proceed in other directions of research. If the texts are truly oral (not read from a written text) and well recorded, they will be a valuable resource for Indo-Aryan and Nepali scholars.

The book begins with a good introduction by the editor (Genetti) and an easy-to-follow grammar sketch. In the introduction, 24 of 58 illustrative examples are from conversations or stories, and the transcriptions are easy to understand. Genetti explains that the book is composed of four papers and a collection of narratives written by graduate students during the Field Methods course at UCSB in the 1992-1993 academic year. Data is mostly from one native speaker.

Genetti ends her introduction with Nepali's typological characteristics and an appendix of references for Nepali linguistics. The theoretical orientation of the editor and graduate students is functional/typological because '... the ultimate goal of linguistics is to understand the relationship between linguistic constructions and their communicative functions in natural language' (p. 2). Consequently the writers depend, for the most part, upon 'natural' data from conversation and stories. As Genetti says, such an approach lends itself to more exact insight into language universals.

The first article concerns the Dative Subject Construction (DSC), and tries to clarify its function relative to previous research. Out of 82 examples, 22 are from unelicited material—the author mentions how word order changes according to whether or not the sentences are elicited. The study is an interesting investigation of subjecthood and topic as they relate to DSCs.

The second article is a study of passive formation which the author considers to have been misconstrued by earlier researchers. The author shows that the construction is really a marker for Agent, and aptly points out and illustrates that there is a difference between Subject and Agent in Nepali. Although the importance of 'natural' data is mentioned, the author does not say whether her 33 examples are elicited or not.

The third article pertains to a controversial compound word that has been interpreted as a verb derived from a noun (i.e., N + garu-nu 'to do/make'). The author explains and illustrates well that the construction is not an example of noun plus verb compounding but is syntactic where the noun shows characteristics of objecthood. There are 38 examples-all of which are not specified according to their 'naturalness'.

The fourth article shows that verbal suffixes *daa* and *day* are not free variants of a participial morpheme as some researchers have claimed, but each exhibit characteristics different from the other, as well as some that overlap. The author discusses, as do others, the consequences of relying on elicited data to the exclusion of data from conversation and texts, which can lead to skewed conclusions. Of the 40 examples, 25 are elicited.

In the last section of the book, one of the stories (p. 208) is divided into intonation units (IU) following DuBois (in 'Discourse Transcription' in vol. 4 of the Santa Barbara Papers in Linguistics 1992), thereby better representing the natural sectioning of the text.

In my opinion, this book illustrates what field linguists ought to be about: sticking to data that is as naturally occurring as possible, thereby laying a basis for more realistic theory building and faithful translation that reflects actual language facts. Such works as these promote a deeper understanding of the world's languages and cannot but help us be better linguists if by nothing else than just following their example.

It is a good introduction to Nepali and provides an avenue for verification of results presented and for further research. I've not often seen such scholarly vulnerability. Its awareness of the dangers of elicited material is one that all field linguists should possess. This, I believe, is its chief contribution.

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East Asian linguistics. Santa Barbara Papers in Linguistics, Volume 5. Shoichi Iwasaki, Tsuyoshi Ono, Hongyin Tao, Hyo Sang Lee, editors. 1994. Santa Barbara, CA: University of California. 263 pp. $15.00.

Reviewed by BRIAN MIGLIAZZA
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My interest was originally aroused in this volume because I thought there might be something on Southeast Asian languages, but unfortunately for me this was not the case. The title 'East Asian' means what it says, and the papers mostly discuss the three main languages of the East Asia region—Chinese, Japanese, and Korean. But anyone working in Asian linguistics will find it helpful to know something about Chinese, since its influence has been so pervasive. What makes these papers of further interest is, as the editors say in their preface, that they contain 'analyses heavily based on data'. Each paper has a great deal of data, allowing the reader to independently verify the papers' conclusions and make cross-language comparisons. Quite a bit of the data comes from text sources (including conversations) rather than just elicited material. Most of the papers are about syntax, a few are on phonology, and several more are focused on discourse and pragmatics.

These papers should be useful to anyone working in Asian languages. Out of 14 papers (the result of the May 1993 '2nd East Asian Linguistics Workshop' held at University of California, Santa Barbara), four deal with Chinese (Cantonese, Mandarin, Hui), seven with Japanese, and three with Korean. The Chinese papers discuss syllable structures and inventories, pause in discourse, grammaticalization, and the present perfect. The Japanese papers discuss self repair, constituent prototypicality, core-oblique distinction in discourse, use and meaning of an auxiliary verb, grammaticalization, and feature geometry segmental phonology. The Korean papers discuss grammaticalization and interaction in conversation.

Personally, I found relevant the first paper by Kawai Chui 'Grammaticization of the saying verb *wa* in Cantonese', in that Thai seems to also have a very similar saying verb, *waa* (falling tone), which can act as a verb, an auxiliary verb (with verbs of saying, knowing, asking) and also as a complementizer (frequently translated 'thus' or 'that').

The article on prototypicality prompted me to consider similarities with 'So', a Katuic (Mon-Khmer) that I am investigating. The article on segmental phonology utilizes aspects of autosegmental theory, and gave me some pointers for differentiating the lexicon into four areas—native (So words), foreign (which for the So language usually means Thai or Lao words), onomatopoeia, and mixed—and then fixing the boundaries of these strata based on co-occurence restrictions of the segments. The article on 'discourse perspective for core-oblique distinction in Japanese' helped me reflect on how we distinguish core and oblique arguments in So. English distinguishes these in that core roles (subject and objects) are left unmarked and obliques are generally marked by prepositions, while 'So' usually distinguishes its NP roles through word order and the use of particles.

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Paradigms and barriers: How habits of mind govern scientific beliefs.

By HOWARD MARGOLIS. Chicago: University Press. 1993. 279 pp. Cloth $40.00, paper $15.95.

Reviewed by RONNIE J. SIM
SIL—Africa Group

Margolis writes for those interested in broader, more philosophical questions of knowledge, including that of the scientific enterprise within which linguistics lies. The book is the second part of a trilogy concerned with 'persuasion and belief in the context of social choice' (xi); probably the greatest indication of the success of such a book is whether it instills in its readers a desire for the earlier volume. *Paradigms* has achieved that, as far as I am concerned.

The first volume, *Patterns, thinking and cognition* (1987), set out to argue that cognition is nothing more nor less than a process of pattern recognition, so 'habits-of-mind' are unlikely to be different in any essential way from physical habits in terms of neural encoding (p. 2). Learning is the modification of existing patterns and the forming of new linkages among patterns (p. 8). The theory aims to account for the concept of paradigm shift in terms of 'habits-of-mind', or its synonym 'pattern cognition'.

Paradigms follows that through, showing in some detail how pattern-cognition applies explanatorily to several case studies in the history of science. Appendix A is a 7-page summary of *Patterns*, which I found myself reading immediately after the Preface of *Paradigms*. This whetted—but hasn't sated—my appetite for the first volume.

Volume 3 promises to deal at length with a problem that has long intrigued me: How is it that the judgment of 'the man in the street' so often disagrees with (and I still suspect is repeatedly superior to) that of the expert opinion in the position of power? To me this polarization is a recurrent phenomenon, and is worth the attention Margolis proposes to give it.

The book opens with three short chapters (42 pp.) expounding Habits of Mind, Paradigms, and Barriers. Chapter 1 argues that physical and mental habits are the same sort of thing and looks for parallels between the two. Chapter 2 considers what are the properties of mental habits, and links individual mental habits with Kuhnian paradigms and paradigm shift. The notion of rivalry concerns what is required to challenge established patterns of cognition. Rivals are either tamed or compel pattern restructuring.

In chapter 3 entrenched patterns are held to be the barrier inhibiting the acceptance of new notions, and the restructuring of an established pattern to accommodate them. When Thomas Kuhn suggested that human progress (and scientific progress in particular) was not a uniform steady growth of knowledge but was characterized by discontinuity in which progress is achieved by leaps and bounds through successive cycles of paradigmatic uniformity, challenge, tension, and paradigm shift, he gave rise to the modern theory of scientific progress which underlies modern schools of linguistics as much as the physical and social sciences. For example, Chomsky's celebrated review of Skinner is a part of the modern reassertion of a cognitive (rather than a behaviorist) starting point for explanation. Margolis builds on Kuhn, proposing that a schema based on recognition of new patterns is superior to the more familiar assumption that the existence of a logical gap explains the 'difficulty' of changing paradigms. For Margolis, 'the critical discontinuity is cognitive, not logical' (p. 25); in other words it is not that the logic of the new is insufficiently tight and presents too large a gap for most of us to leap across, but rather that the new is tamed by the existing pattern until the existing pattern is rivaled successfully. The entrenched habit is the means (or cause) of resisting change, until at some point the pattern is rivaled to a severity that restructuring is required to re-establish simpler and reunified cognition. Margolis might object to the suggestion that the book's value lies in the first 42 pages, but readers who are reluctant to get into the particular case studies which follow will find them worth serious attention. (Readers on a strict reading regime might try the Preface, Appendix A, chapters 1, 2, 3, and 10).

These three opening chapters are then followed by lengthy discussions on the application of Margolis' approach to several scientific 'revolutions' of the past. These are the refutation of the Phlogiston theory of combustion, the recognition of probability as a fundamental concept, the Copernican revolution in astronomy, and the emergence of the central role of the empirical experiment through the Hobbes-Boyle controversy on the behavior of gases. In each case Margolis is concerned to show how a pattern-based view of cognition and hence, cumulatively in a population, of cognitive paradigms and shift, is explanatorily valuable. To list these case studies reveals the focus of the book. The subtitle does reflect the book's exposition within the context of science. Its application to other areas of belief is not developed and is not trivial to work out. I hope someone does something in this area.

The relevance of the topic is now self-evident: the book is concerned with epistemology and cognition—how we know, or more cautiously stated, how we believe. Its claim is that habits of mind, or pattern-cognition, plays a significant role in the 'evolution of belief' (p. 7).

Finally, how does Margolis' position relate to the ultimate materialism (and reductionism) of Francis Crick and others, namely that human consciousness is nothing more than collective neural activity (which is probably the central issue in current evolutionary science)? It seems the two are founded on the same Darwinian assumptions, although Margolis' framework is not in essential contradiction with positions which hold onto personality as an entity beyond biochemistry.

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Bantu phonology and morphology. LINCOM Studies in African Linguistics 06. By FRANCIS KATAMBA, editor. München, Germany: LINCOM Europa. 1995. Pp. 116. Paper $24.00.

Reviewed by KEITH SNIDER
SIL—Cameroon Branch

Any linguist studying the phonology and morphology of a Bantu language would do well to read this collection of six articles edited by a leading Bantuist. The articles, which represent a nice mixture of well-known and lesser-known authors, are all well-written and address a number of important issues in the field. With the exception of Chapter 5, which wrestles with defining ideophones in ChiTumbuka, the articles attempt to explain various phonological and morphological phenomena.

Chapter 1, by Al Mtenje, explores how lexical tone is assigned to morphemes in Chichewa (Malawi and surrounding countries). In relatively recent times there has been a debate over whether lexical tone in many Bantu languages should be treated with an ACCENTUAL analysis or with the more traditional TONAL analysis. Mtenje argues that an accentual analysis is not only unnecessary for Chichewa but is, in fact, inferior to a tonal analysis.

In Chapter 2, Laura Downing investigates the metrical domain of tonal register raising in Jita (Tanzania) Yes/No questions. She argues that the domain of register raising 'must be defined as an unbounded, quantity-sensitive metrical foot' (p. 28). She contrasts an analysis of the register raising domain using the metrical theory of Halle and Vergnaud 1987 with an optimality approach (McCarthy and Prince 1993, Prince and Smolensky 1993) and concludes that the optimality approach provides a more straightforward explanation of the phenomena investigated. I found her analysis convincing and interesting though I would have appreciated more background information about the tone system in general, and it would have been helpful to have seen actual pitch contours as opposed to verbal descriptions of what was happening.

David Odden (Chapter 3) discusses phonology at the phrasal level in Bantu. Preferring theories in which phonological rules may make direct reference to syntactic structure, he surveys the different ways that syntax influences phonology in nine Bantu languages. These are: Chimwiini, Kimatuumbi, Chaga, Kinyambo, Kikongo, Jita, Runyambo, Makonde, and Xitsonga. In Chimwiini, for example, there is a rule of Shortening that 'affects a syllable followed by three or more moras in the word or phrase' (p. 41), but this rule observes syntactic restrictions on the word pairs to which it applies. It does not apply when the environment in which it would otherwise apply consists of a subject NP followed by a VP. It similarly fails to apply to the first NP in a double object construction, and also to an adjective that is in turn followed by another adjective in the NP. Odden concludes that the wide range of phonological sensitivity to syntactic structure that he has discovered in Bantu languages suggests that 'we have not yet exhausted the ways in which syntactic structure can influence phonological rules in Bantu' (p. 67). Odden makes his case clearly and succinctly.

In Chapter 4, Scott Myers demonstrates how in Shona (Zimbabwe) there is a mismatch between the phonological word and the syntactic word. Adopting McCarthy and Prince's (1993) theory of generalized alignment constraints, which incorporates Selkirk's (1986) end-based theory of phonological domains within the framework of Optimality Theory, he provides a formal account of the phenomena and shows how this account can also be adapted to Kinyarwanda and Kukuya. I found the discussion convincing.

In Chapter 5, Lupenga Mphande and Curtis Rice address the topic of ideophones in ChiTumbuka (Malawi and Zambia). They note that the literature on ideophones in African languages has yet to adequately define them. Exploring the domains of semantics, syntax, discourse/pragmatics and phonology, they demonstrate that in ChiTumbuka only phonological criteria are valid for defining ideophones and conclude that ideophones in the language are distinguished from other lexical domains in that they alone retain vestiges of certain proto-Bantu phonological features—i.e. contrasts in tone, nasality, and vowel length. For example, the language is said not to be otherwise tonal but that it rather assigns penultimate stress. Ideophones, however, are said to interrupt the normal sentence-level prosody by having their own distinctive tone. The discussion and examples are clearly presented although I would have appreciation more support for some examples.

In Chapter 6, Ngessimo Mutaka discusses the prosodic circumscription of morphological domains in Kinande (Eastern Zaire) verbal forms. In Bantu morphology the verbal form is comprised of two main phonological domains: the stem domain which consists of the root, the extensions and the final vowel, and the inflection (INFL) domain which consists of the subject marker and tense/aspect markers. The object marker, which is usually 'sandwiched' between the tense/aspect markers and the root, is phonologically interpreted as belonging to the INFL domain in some languages and to the stem domain in other languages. Mutaka claims that the object marker goes with the stem domain in Kinande. He further claims that in the recent and remote past tenses, the aspectual marker *na* also goes with the stem domain. He explains this unexpected behavior by invoking the notions of morphemic circumscription and stem optimality (Prince and Smolensky 1991). The article is argued well and convincing, however many readers will find it slow-going.

Although my review of the contents of the volume is basically positive, I am not so impressed with its physical attributes. There are a number of typos and repeated lines. I also found the type size to be too small to read easily and I was disappointed in the poor quality of the binding.

REFERENCES

Halle, Morris and Jean-Roger Vergnaud. 1987. An essay on stress. Cambridge: MIT Press.

McCarthy, John and Allan S. Prince. 1993. Generalized alignment. University of Massachusetts, ms. Amherst and Rutgers University.

Prince, Alan and Paul Smolensky. 1991. Optimality. Talk presented at the Arizona Phonology Conference, Tucson.

_________. 1993. Optimality theory: Constraint interaction in generative grammar. Rutgers University and University of Colorado at Boulder, ms.

Selkirk, Elisabeth. 1986. On derived domains in sentence phonology. Phonology Yearbook 3:371-405.

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Grow your vocabulary by learning the roots of English words. By ROBERT SCHLEIFER. New York: Random House. 1995. 352 pp. Paperback $13.

Reviewed by CRAIG SODERBERG
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The front cover of Schleifer's book claims that it will help the reader learn over 4500 words from 850 roots. The book is divided into five parts. The first part has three sections: one-root derivatives, two-root derivatives, and three-or-more-root derivatives. Here S introduces the reader to 36 primary roots (and about 250 secondary roots), and about 25 derivative English words for each primary root or root group. Words derived from these roots are systematically dissected, analyzed, reconstructed, defined and, when necessary, spiced with additional commentary. Memory aids are provided and technical information is explained.

Part II provides helpful hints and introduces new roots that compliment the roots previously introduced. For example, part I introduces *locu-*, and *locut-* meaning 'to speak'. Part II introduces new roots that accompany *locu-* in the format shown below:

soliloquy Reconstruction: alone or solitary (sol-) connecting vowel (l-) to speak (loqu-) the act of (-6)
Definition: Noun, the act of talking to oneself, monologue

In part III, Schleifer gives an overview of various words from professional fields (i.e. astronomy, engineering, medicine, etc.). He then illustrates terms considered to be specialty words and phrases such as acronyms, portmanteaus, clipped forms, proprietary terms, eponyms (words derived from persons' names), toponyms (words derived from place names), and finally words derived from classical mythology, the Bible, and foreign languages. In the final section of part III, S outlines picturesque words and expressions such as phobias, manias, words with colors in them, words with animals in them, and expressions from baseball and boxing.

In part IV, S gives a short course on the origin of English words, with information on words derived from various languages around the world. For example, *igloo* and *husky* are derived from Inuit (an Eskimo language). *Zombie* and *chimpanzee* come from Bantu languages of Africa; *skunk* and *squash* come from Algonquian (American Indian); and *commando* and *trek* from Afrikaans. Despite this trivia, probably 90 percent of all English words derive from three primary sources: Anglo-Saxon, Latin, and Classical Greek. In part IV S outlines how these three sources impacted the English language.

The final section has a cross-reference dictionary with thousands of prefixes, suffixes, bases, words, expressions, names, and other linguistic forms alluded to in earlier sections. Here they receive a detailed etymology.

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Traditional narratives of the Arikara Indians, Volumes 1-4. By DOUGLAS R. PARKS. Lincoln: University of Nebraska Press. 1991. Pp. xxxiv, 684; xiv, 685-1344; xxv, 468; xv, 469-902. Cloth $125.00 set.

Reviewed by RUDOLPH C. TROIKE
University of Arizona

At a time when many of the world's languages are becoming moribund or extinct, and the unique linguistic products of thousands of years of historical development are rapidly disappearing, concern has been growing about archiving samples of this linguistic diversity for the benefit of future researchers and for the descendants of the speakers of these languages. Especially among older SIL branches, as translation work has matured, more attention is being given to this issue. A partial solution is illustrated in these exemplary volumes, which commend themselves to the attention of anyone interested in such a project.

The Arikara are the northernmost branch of the Caddoan linguistic family (which includes the better-known Pawnee), whose speakers once occupied much of the area from east Texas to the Dakotas. Decimated by European diseases and warfare between tribes and with the U.S. military, only a small remnant of the estimated original 10,000 Arikaras today live on the Ft. Berthold reservation in North Dakota. The material presented in these volumes was collected by Douglas Parks between 1970 and 1987 from some of the oldest fluent speakers. Parks, at present the editor of *Anthropological Linguistics*, has long been active in working to promote the preservation of Arikara, including developing materials for teaching the language at the college level and in an elementary school bilingual program.

This work is presented in a somewhat unusual format, aimed at the differing interests of potential audiences, as well as reflecting different typographical requirements. Volumes 1 and 2 are devoted to 156 texts in Arikara, given with a rough interlinear word-level translation in English. Arikara is written phonemically (words are given in citation form) and printed in boldface; English is in a normal typeface. Each of the two volumes has an appendix containing a short text with complete interlinear morphemic analysis. As Arikara is a polysynthetic language, the effect of the latter mode of presentation is to expand a six-page text to over seventeen pages! An example of one word will suffice to illustrate:

kana'AhnatoxtaakunuuwaaWI

kana	**+an**	**+na**	**+t**	**+a**	**+ux**	**+raak**	**+hunuu**	**+waa**	**+wi**
NEG	+EV	+MOD ABS	+1 SUBJ	+IN PL SUBJ	+AOR	+PL	+go around	+DIST	+SUB

'when we were not going around'

Much as one might wish for a morphemic analysis throughout, expanding these already long volumes three-fold would be cost-prohibitive. However, it would be useful if at some point the texts could be made available in computer-readable form.

Volumes 3 and 4, which are in a more compact size, contain the free English translations of the texts in volumes 1 and 2, respectively. In addition, volume 3 has a valuable 124-page introduction, which discusses the tribal history and culture, the collection of the stories, the personal histories of the narrators, the characters in the stories, and the linguistic, literary, cultural, and rhetorical features, and performance contexts of the texts. An important aspect of the free translations is that they are presented as literary forms that attempt to 'preserve the literary devices of the originals', reflecting Park's goal of recognizing these narratives as the true oral literature of the Arikara. These two volumes could be purchased alone and read with interest and appreciation by anthropologists, folklorists, students of American Indian literature, and tribal members who no longer know their ancestral language. At the same time they can be used conveniently alongside the first two volumes in studying the original texts.

Parks will long merit the gratitude of many for having preserved this linguistically and culturally valuable body of literature from the oblivion which is rapidly overtaking so many languages today. He has, in addition, provided a useful model which deserves to be widely emulated.

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NEW JOURNAL AVAILABLE

The first issue of the Journal of Amazonian Languages has now appeared. Subscription information is available from Ms. Carolyn Anderson, Dept. of Linguistics, 2816 CL, University of Pittsburgh, Pittsburgh, PA 15260.

Des Derbyshire and Geoff Pullum join me in encouraging researchers on Amazonian languages to contribute to JAL (mss. may be sent to me at the address below). The Handbook of Amazonian Languages is now sending its final volume to press and both Pullum and Derbyshire encourage people who might have otherwise submitted to HAL to submit to JAL. Partial grammars or brief grammars of Amazonian languages are welcome, as are articles in typology, historical or comparative linguistics, theoretical linguistics, sociolinguistics, language preservation, etc.

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Backley, Phillip and John Harris, Eds. 1996. Working papers in Linguistics 8 (UCL). Research reports by staff and postgraduates of the Dept. of Phonetics and Linguistics. London: University College. 623 pp.

Bailey, Charles-James N. 1996. Essays on time-based linguistic analysis. New York: Oxford University Press. 423 pp. Cloth $99.00.

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Khym, Hangyoo and Supath Kookiattikoon, eds. 1997. Kansas Working papers in linguistics, Vol. 22, No. 3. Special issue on optimality theory. Lawrence: University of Kansas. 92 pp. $10 ($5.00 students).

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